Schofield & Sims

Mental Arithmetic 5

Name

THE LANGUAGE OF MATHS

approximation   a close estimate – an approximate answer is one that is close to the exact answer
Example 9 × 21 is approximately 10 × 20 = 200

composite number any number that is greater than 1 and is not a prime number

consecutive   things that follow one after another in order
Examples 6, 7, 8 and 9 are consecutive numbers
           March, April and May are consecutive months

hectare   10 000 square metres

inclusive   including all the things that have been mentioned – the opposite of inclusive is exclusive
Example in the question 'How many days from 1 March to 8 March inclusive?', you would include both 1 and 8 March in your calculations (making eight days)

multiple   the multiple of a number can be divided exactly by that number (without a remainder)
Example 4, 6, 8 and 100 are all multiples of 2 because 2 divides into them with no remainder

negative number   a number less than zero – a negative number has a minus sign in front of it
Example –1, –2

prime number   a number that divides by itself and 1 only
Example 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

prism   a three-dimensional (3–D) shape with two ends that are the same size and shape
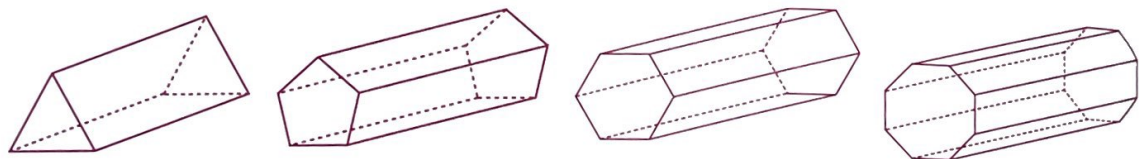
square number   any number made by multiplying a whole number by itself
Example 4 is a square number; it has been made by multiplying 2 by itself 2 × 2 = 4 or 2^2 = 4

square root √   a number that has been multiplied by itself to make a square number – a square root is the opposite of a square number
Examples the square root of 4 is 2 because 2 × 2 = 4
           the square root of 9 is 3 because 3 × 3 = 9

CONTENTS

SECTION 1 | Test 1

Answer

A

1. $60\,000 + 3000 + 70 + 8 =$ _____

2. $5 \times 8 \times 7 =$ _____

3. $8l\ 550ml - \frac{1}{4}l = \boxed{\ }l$ _____ l

4. $\frac{5}{6}$ of £42 = _____ £ _____

5. a $3\frac{5}{8} = \frac{\boxed{\ }}{8}$ _____ a _____8_____

  b $6\frac{4}{5} = \frac{\boxed{\ }}{5}$ _____ b _____5_____

6. £7.30 + ▨ 10ps = £10 _____ 10ps

7. $3650m = \boxed{\ }km\ \boxed{\ }m$ _____ km _____ m

8. $180° - (86° + 64°) =$ _____ °

9. a $\frac{19}{50} = \boxed{\ }\%$ _____ a _____ %

  b $0.64 = \boxed{\ }\%$ _____ b _____ %

10. $5.08 = \boxed{\ }$ thousandths _____ thousandths

11. $6^3 = 6 \times 6 \times 6 =$ _____

12. $£4.50 \div 7 = \boxed{\ }p\ r\ \boxed{\ }p$ _____ p r _____ p

B

Answer

1. Write in words the number which is 400 less than 50 000. _____

2. Find in £s the total of 18p, 16p, 25p, 9p. £ _____

3. Change these improper fractions to mixed numbers.

  a $\frac{35}{6}$ b $\frac{63}{8}$ _____ a _____ b

4. Find the difference between three 50ps and the sum of twelve 5ps and six 2ps. _____ p

5. How many times is 25g contained in 4kg? _____

6. Find the change from a €5 note after spending €2.03. € _____

7. Which of these numbers are factors of 56?

  | 2 | 3 | 5 | 7 | 9 | _____

8. What percentage of 2l is 400ml? _____ %

9. Approximate

  a 29.56 to the nearest 10 a _____

  b 180 370 to the nearest 1000. b _____

10. What fraction in its simplest form is equal to

  a 95% b 0.04? a _____ b _____

11. Find the cost of 700g at 90p per kilogram. _____ p

12. Find the area of a square with sides measuring 20cm each. _____

C

Answer

1. How many thousandths must be added to 9.073 to make 10? _____

2. Find the change from £1.50 after buying 2kg of oranges at 36p per $\frac{1}{2}$kg. _____ p

3. Imran faces SE and turns clockwise through $1\frac{1}{2}$ right angles. In which direction is he now facing? _____

4. A car travels 40km in 30min. How many kilometres will it travel at this speed in $\frac{3}{4}$h? _____ km

5. A mango weighs 250g. How many mangoes together weigh 50kg? _____

6. From the diagram find what fraction of all the employees are

  a men a _____

  b women. b _____

  c If the total number of employees is 400 how many are under 18? c _____

Employees in a shop

| | men | women | under 18 |

7. Amy spends 30% of her money on a book and saves 60%. If she had 20p left how much had she at first? £ _____

8. A square with sides measuring 20cm each is cut along both diagonals into four equal triangles. What is the area of each triangle in cm²? _____ cm²

9. A bus departs at 19:47 and arrives at its destination 1h 16min later. Write the time of its arrival. _____

10. The area of a rectangular path is 75m². It is 50cm wide. How long is it in metres? _____ m

11. In seven weeks Katie saves £3.15. Find her mean average weekly savings. _____ p

12. The measurements of the box are given. Find the area of

  a both the sides a _____

  b both the ends b _____

  c the top and bottom. c _____

4

Mental Arithmetic 5

SECTION 1 | Test 2

A
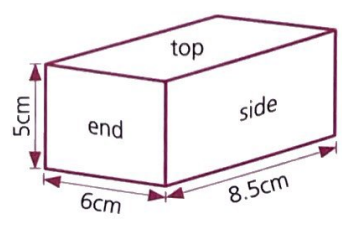
1 Write $10 \times 100 \times 100$

  a in digits   a _____

  b in words.   b _____

2 £7.60 × 20 =   £ _____

3 $1 = \frac{1}{4} + \frac{3}{8} + \square$ _____

4 10 − 6.32 =   _____

5 320min = $\square$ h $\square$ min   ____ h ____ min

6 $\frac{4}{5}$ of £4.50 =   £ _____

7 0.175l = ____ ml   _____ ml

8 25% of £7.00 =   £ _____

9 2.4m + 55cm = ____ cm   _____ cm

10 **a** 1% of £1 = $\square$ p   a _____ p

  b 13% of £1 = $\square$ p   b _____ p

11 4050mm = $\square$ m   _____ m

12 $\frac{3kg\ 420g}{6}$ = ____ g   _____ g

B
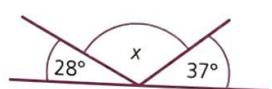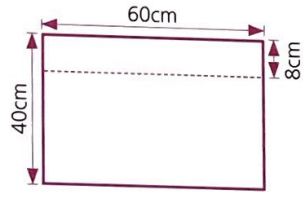
1 Multiply the sum of 3.6 and 2.4 by 0.4.   _____

2 Give the date which is five months before 1 February.   _____

3 Which of these angles are

  a acute angles   a _____

  b obtuse angles?   b _____
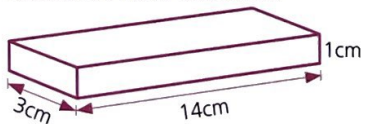
  | 47°   92°   138°   89°   210° |

4 Three presents have a mass of 450g, 800g and 230g. Find their total mass in kilograms.   _____ kg

5 By how many millimetres is 780mm greater than 0.5m?   _____ mm

6 How many 20ps have the same value as £9.00?   _____ 20ps

7 Write the answer to MD − DCCCXC in Roman numerals.   _____

8 How many times 0.625 is 625?   _____

9 Write as a percentage.

  a 17p of £1.00   a _____ %

  b 300g of 1kg   b _____ %

10 300ml cost 27p. Find the cost per litre.   _____ p

11 Approximate

  a $10\frac{3}{10}$ to the nearest whole number   a _____

  b £13.52 to the nearest £.   b £ _____

12 Find the area of a rectangle measuring 7m long and 1.3m wide.   _____ m²

C

1 By how many pence is thirteen 10ps less than the total of two 50ps and nine 5ps?   _____ p

2 Of 300 children in a school, 43% were boys.

  a What percentage were girls?   a _____ %

  b How many boys were there in the school?   b _____

3 Find the angle marked x.   _____ °

4 A bucket holds 5l when full. Find the quantity of water in litres and millilitres when the bucket is $\frac{3}{4}$ full.   ____ l ____ ml

5 Which of these fractions is

  a the largest   a _____

  b the smallest?   b _____

  | $\frac{3}{5}$ $\frac{3}{4}$ $\frac{7}{10}$ $\frac{13}{20}$ |

6 The attendance at a concert was 6843.

  a Approximate this number to the nearest thousand.   a _____

  b Find the difference between the actual and the approximate numbers.   b _____

7 Sophie's home is 850m from school. How far in kilometres does she walk in a week of five days, making one return journey each day?   _____ km

8 A card 60cm by 40cm is cut into strips each 8cm wide.

  a How many strips are cut?   a _____

  b Find the total length of the strips in metres.   b _____ m

9 A box containing 60 marshmallows costs £3.68. Find the cost of 15 marshmallows.   _____ p

10

Dates of birth	
Josh	1.02.2014
James	1.10.2011

Find the age in years and months of Josh and James on 1 September 2030.

Josh   ____ yr ____ mth

James   ____ yr ____ mth

11 Through how many degrees does the minute hand of a clock turn in 10 minutes?   _____ °

12 How many centimetre cubes are needed to make this block?   _____

5

A
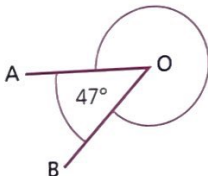
Answer

1   Write as a decimal $100 + \frac{3}{10} + \frac{7}{1000}$. _____

2   $4\frac{3}{4} \times 8 =$ £_____

3   $£2 - (35p + 63p) =$ _____ ml

4   $1\frac{1}{4}l - 900ml =$ ___ ml   _____

5   $3.8 - 2.76 =$ _____

6   $35\% = \overline{100} = \overline{20}$ _____ $\overline{100} = \overline{20}$ _____ g

7   ___ $g \times 100 = 4kg$ _____ h _____ min

8   7:43 a.m. to noon = ___ h ___ min   _____ cm _____ mm

9   $\frac{553mm}{7} =$ ___ cm ___ mm   _____ kg

10 $830g \times 5 =$ ___ kg

11 a 10% of £12.00 =   a £_____

    b 70% of £12.00 =   b £_____

                          £_____

12 $\frac{2}{3}$ of £1.08 = £___

B

Answer

1   Multiply the sum of 29 and 18 by 8.   _____

2   Decrease £3.50 by 20%.   £_____

3   Find the reflex angle AOB.   _____ °

4   How many times is 0.7m contained in 28m?   _____

5   How many days in 26 weeks?   _____

6   What percentage of 1kg is 550g?   _____ %

7   Find the time in hours and minutes from 09:40 to 13:25.   _____ h _____ min

8   What is the cost of 2.5kg at 18p per $\frac{1}{2}$kg?   _____ p

9   What percentage of the circle is
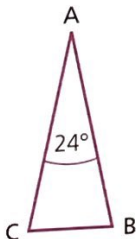
    a shaded ☐   a _____ %

    b patterned ▦   b _____ %

    c plain? ☐   c _____ %

10 Approximate

    a 27.9km to the nearest kilometre   a _____ km

    b 3.450kg to the nearest kilogram.   b _____ kg

11 20 tennis balls cost £8.20. Find the cost of five.   £_____

12 The area of a rectangle is 30m². Its width is 2.5m. Find its length.   _____ m

---

1   A milkshake which cost 43p was paid for with a £1 coin. Which three coins were given as change?   _____ p _____ p _____ p

2   In the number 30.632, how many times less is the 3 marked *y* than the 3 marked *x*?   _____

3   Find the product of DX and V and write it using Roman numerals.   _____

4   Four children receive these amounts of money: 55p, 66p, 45p and 50p. Find the mean.   _____ p

5   A paddling pool contained 75l of water. 10% of it was wasted. Find in litres and millilitres the quantity which remained.   _____ l _____ ml

6   ABC is an isosceles triangle. Find the angles at the base.

    ∠ ABC   _____ °

    ∠ ACB   _____ °
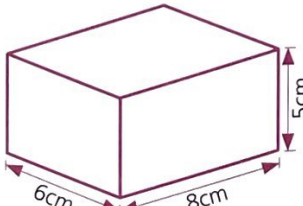
7   {1, 2, 3, 6, 9, 18, 36} Two numbers are missing from this set of factors of 36. Which are they?   _____ and _____

8   A dog's mass increased from 40kg to 42kg. What was the increase

    a as a fraction   a _____

    b as a percentage?   b _____ %

9   Which is the better buy, A or B, and by how much?

    A Eight 250g packs of rice at 45p per pack

    B 2kg of rice at £1.60 per kilogram   _____ by _____ p

10   Find in centimetres the length of a diameter which is twice that of the given circle.   _____ cm

11 A tin of red paint costing £4.50 will cover 5m².

    a How many tins must be bought to cover a wall 5m by 3m?   a _____

    b What is the cost?   b £_____

12   48 centimetre cubes fit exactly into the bottom of this box. The box is 5cm deep.

    How many cm cubes are needed to fill it?   _____

A

		Answer
1	$7 \times 10^2 =$	
2	$\frac{3}{4} + \frac{1}{8} + 2 =$	
3	$100 - (8 \times 9) =$	
4	$0.085l =$ ml	ml
5	$5.07 \times 6 =$	
6	£27 ÷ 100 = p	p
7	650g + 0.5kg = kg	kg
8	$\frac{1}{20} = \overline{100} =$ %	$\overline{100}$ = %
9	2h 37min + 1h 33min = h min	h min
10	75% of 30kg = kg g	kg g
11	$3 + 5 \times 2 =$	
12	a 18p = % of £1	a %
	b 45cm = % of 1m	b %

B

		Answer
1	Write as a decimal 3085 thousandths.	
2	From the total of 83p and £1.06 take 70p.	£
3	Find the product of 0.6 and 9.	
4	Find the total number of days in the months of September, October and November.	
5	When a number is divided by 9 the answer is 64 r 5. What is the number?	
6	Three peaches cost 87p. Find the cost of two peaches.	p
7	What fraction in its lowest terms is	
	a 800g of 1kg	a
	b 150ml of $\frac{1}{2}$l?	b
8	How many times greater is 5030 than 5.03?	
9	a 20% of £8.50	a £
	b 60% of £8.50	b £
10	Approximate	
	a £1.095 to the nearest penny	a £
	b 9.150l to the nearest $\frac{1}{2}$l.	b l
11	0.5kg of grapes cost £1.50. Find the cost of 700g.	£

12 Find the area of the triangle.

Triangle with height 9cm and base 16cm.
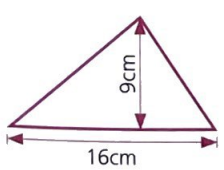
C

		Answer
1	The volume of a bucket is 1950cm³. How many litres of water does it hold? (1cm³ = 1ml)	l
2	A car travels 360km on 40l of petrol. How many kilometres per litre is this?	
3	243 × 15 = 3645	
	Find a 2.43 × 15	a
	b 24.3 × 1.5	b
4	The bill at the end of a meal came to £20.40. 10% was added as a service charge. How much was added?	£
5	Buses run at intervals of 18min. Find the times of the next two buses after 09:37.	

6 In the triangle ABC, find ∠ ACB _____ ° ∠ BAC. _____ °

Triangle ABC with angle 130° at C and 55° at B.

		Answer
7	The mass of a 10p coin is 6.5g. What is the mass in kilograms of £20 in 10ps?	kg
8	A line 9cm long represents the distance flown by an aeroplane. If the line is drawn to a scale of 1mm to 50km, find the actual distance.	km
9	Follow this number trail. What number do you reach? start at 3 → subtract 7 → add 9 → subtract 12 →	
10	A rectangle measures 3m long and 70cm wide. Find its area in m².	m²
11	Seven lemons cost £2.80.	
	a What fraction of £2.80 will three lemons cost?	a
	b Find the cost of five lemons.	b £
12	Point A is at (−2, 1). Write the coordinates of its reflection in the y-axis (the vertical axis).	(,)

Coordinate grid with point A at (−2, 1).
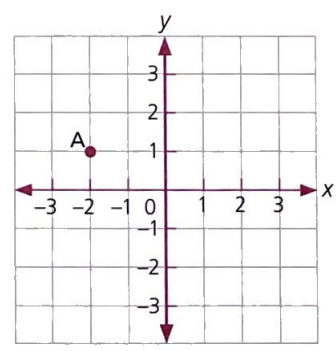
SECTION 1 | Test 5

A · Answer

1. Write in digits

   a 0.7 million   a _____

   b 1.2 million.   b _____

2. 19p + 27p + 63p = £ ☐   £ _____

3. 12.65km = ☐ m   _____ m

4. $2\frac{7}{8} + 1\frac{1}{8} + 1\frac{1}{4} =$ _____

5. a 1% of twenty thousand =   a _____

   b 100% of four hundred and nine =   b _____

6. $\frac{x}{6} = 12$. Find the value of x.   _____

7. 1.65m − 95cm = ☐ cm   _____ cm

8. $\frac{3}{25} = \frac{☐}{100} = ☐$ % $\frac{}{100} = $ ☐ %

9. 350ml × 9 = ☐ l   _____ l

10. 4.050kg + ☐ g = 5kg   _____ g

11. 35p × 100 =   £ _____

12. 970 ÷ 40 = ☐ r ☐   _____ r

B · Answer

1. How many thousandths are there in five point zero eight?   _____ thousandths

2. Find the mean average of 2.7, 3.6 and 1.8.   _____

3. How many times is 250ml contained in 3.5l?   _____

4. Increase $240 by 5%. $ _____

5. How many hours and minutes from midnight to 1:45 p.m.?   _____ h _____ min

6. Which of these numbers is a multiple of 4, 6 and 9?

27	42	54	63	72

   _____
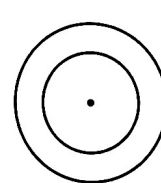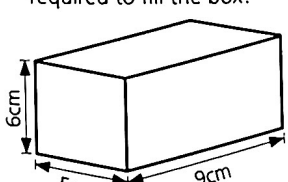
7. What is the mass in kilograms of six presents each having a mass of 230g?   _____ kg

8. 25% of a sum of money is 73p. What is the whole amount?   £ _____

9. Find the cost of 50g at £2.60 per $\frac{1}{2}$kg.   _____ p

10. Write the answer to the nearest whole number. $\frac{705}{8} =$ _____

11. $\frac{3}{8}$ of a sum of money is 24p. Find $\frac{7}{8}$ of the sum of money.   _____ p

12. The perimeter of a square is 1.2m. Find

    a the length of a side in cm   a _____ cm

    b the area of the square in cm².   b _____ cm²

C · Answer

1. Jamil received 12p change from £2 after buying four tins of tomatoes. Find the cost per tin.   _____ p

2. The diameter of a circle is 15.6cm. Find its radius in millimetres.   _____ mm

3. The mean mass of three suitcases is 25kg. If two of the cases have masses of 20kg and 28kg respectively, find the mass of the other case.   _____ kg

4. Which of these fractions or percentages are equal to 0.15?
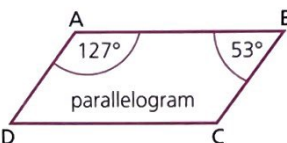
$\frac{1}{4}$	$\frac{3}{10}$	15%	$\frac{3}{20}$	$\frac{18}{100}$	3%

5. Find the smallest sum of money which must be added to £2.45 to make it exactly divisible by 9.   _____ p

6. The chart shows the percentages of adults and children who live on a street of 720 people.

   a What percentage are girls?   a _____ %

   b Find the total number of men and women.   b _____

women	men	boys	girls
13%	12%	35%	?

7. A 12-day holiday started on Friday 26 March. On which day and date did the holiday end?   _____

8. A bath when $\frac{5}{8}$ full holds 60 litres. How many litres does it hold when

   a $\frac{1}{8}$ full   b $\frac{3}{4}$ full?   a _____ l   b _____ l

9. The price of a ticket is increased from £1 to £1.18. What is the percentage increase? _____ %

10. The radius of the inner circle is 56mm and the shaded ring is 16mm wide. Find in centimetres the diameter of the outer circle.   _____ cm

11. The dimensions of a triangle are base 15cm, height 12cm. Find the area of the triangle.   _____

12. a How many cm cubes fit exactly into the bottom of the box?   a _____

    b How many of these layers are required to fill the box?   b _____

    6cm   5cm   9cm

1 $5 \times 10^3 =$ _____

2 $2.805l =$ _____ ml _____ ml

3 £0.07 × 50 = £ _____ £ _____

4 44mm + 28mm + 32mm = _____ cm _____ cm

5 $\frac{7}{8}$ of 640 = _____

6 $1\frac{3}{4}$kg − _____ g = 1.2kg _____ g

7 (0.25 × 4) ÷ 100 = _____

8 5% of 3000 = _____

9 a $\frac{6}{25} = \frac{}{100} =$ _____ %   a $\frac{}{100} =$ _____ %

   b $\frac{9}{20} = \frac{}{100} =$ _____ %   b $\frac{}{100} =$ _____ %

10 0.46 + _____ = 0.505 _____

11 3m 40cm × 7 = _____ m _____ m

12 £34 ÷ 8 = _____ £ _____

B   Answer
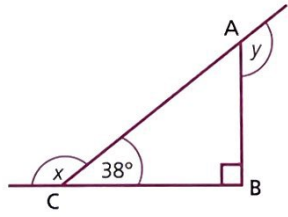
1 How many fifties are there in one hundred thousand? _____

2 1 tonne = 1000kg. Write in tonnes

   a 2050kg   a _____ tonnes

   b 800kg.   b _____ tonnes

3 Write 59-sixths as

   a an improper fraction   a _____

   b a mixed number.   b _____

4 Find the missing numbers in the sequence.

   3.65, 3.8, 3.95, _____ , _____ _____

5 Find in degrees the difference between the temperatures 7°C and −8°C. _____ °

6 100 pencils cost £7.00. Find the cost of   a _____ p

   a 1 pencil   b 30 pencils.   b £ _____

7

A   127°   53°   B

parallelogram

D   C

Find

∠ ADC _____ °

∠ BCD. _____ °

8 What percentage is

   a £7 of £20   a _____ %

   b 28kg of 40kg?   b _____ %

9 How many days inclusive are there from 27 May to 9 June? _____

10 30% of a sum of money is 27p.

   a Find 10% of the money.   a _____ p

   b Find 100% of the money.   b _____ p

11 Divide £2.00 by 7. Give the answer to the nearest penny. _____ p

12 Which year is represented by MMXIX? _____

---

1 The population of a city increased from $\frac{3}{4}$ million to 1.1 million. Write in digits the number by which the population increased. _____

2 A box of doughnuts weighs 400g.

   a How many boxes can be made from 3.5kg?   a _____

   b How many grams are left?   b _____ g

3 In one week Mark drove 503.6km. Find to the nearest kilometre his mean average daily journey. _____ km

4 Which of these numbers do not change in value if the zeros are omitted?

| 0.740 | 3.016 | 0570 | 0.364 |

_____

5

pentagon

The perimeter of a regular pentagon is 36cm. Find in millimetres

   a the length of one side   a _____ mm

   b the length of one side of a regular octagon of the same perimeter.   b _____ mm

6 In a test, Luca scored 87% of a possible mark of 200. How many marks did he lose? _____

7 Nadeen's date of birth is 20/04/14. She is 1 year 9 months younger than Emma. What is Emma's date of birth? _____

8

A y

x 38°

C   B

ABC is a right-angled triangle. Find the exterior angles marked x and y.

∠ $x =$ _____ °

∠ $y =$ _____ °

9 1l of water has a mass of 1kg. If a jar contains 5650ml of water, find the mass of the water to the nearest $\frac{1}{2}$ kg. _____ kg

10 William's wage was increased from £120 to £132 per week. Find the increase

   a as a fraction in its simplest form   a _____

   b as a percentage of the original wage.   b _____ %

11 The mass of an empty box is 870g. This is $\frac{3}{10}$ of its total mass when filled. Find its total mass when filled in kilograms. _____ kg

12 A roll of carpet is 50cm wide. Find the length required to cover a surface which measures 8.5m². _____ m

SECTION 1 | Test 7

Ⓐ   Answer
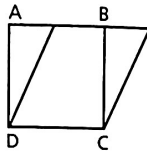
1   Write in digits 1.25 million.   _____

2   £1.06 + 7p + 94p = £   £ _____

3   1.35kg – 900g =   g   _____ g

4   $4.139 = 4 + \overline{100} + \overline{1000}$ $\overline{100} + \overline{1000}$

5   $2\frac{3}{8} \times 5 =$ _____

6   10 000 ÷ 8 =   _____

7   2h 15min – 50min =   h   min   ____ h ____ min

8   $\frac{7}{10}$ of £1.60 =   £ _____

9   $0.85 = \quad \% = \overline{20}$ % = $\overline{20}$

10   46cm × 30 =   m   _____ m

11   a   3% of £1 =   p   a _____ p

      b   12% of £1 =   p   b _____ p

12   $\frac{2l\,250ml}{5} = \quad$ ml   _____ ml

Ⓑ   Answer

1   Multiply the difference between 1.8 and 2.5 by 6.   _____

2   What is the mean in millilitres of $\frac{1}{2}l$, $\frac{1}{4}l$ and 150ml?   _____ ml

3   How many times can a length of 15cm be cut from 4.5m?   _____

4   What percentage of   a _____ %

      a   30 is 15   b   £1 is 23p?   b _____ %

5   Find the two missing numbers in this sequence.
$4\frac{1}{2}, 4\frac{1}{8}, 3\frac{3}{4}, \square, \square$ _____

6   $\frac{1}{2}l$ of vinegar costs £1.20.
Find the cost of 200ml.   _____ p

7   Write the 24-hour clock time which is 27min later than 23:36.   _____

8   The total mass of nine equal packets is 6kg 750g. Find in grams the mass of one packet.   _____ g

9   5% of a sum of money is £0.65. What is the whole amount?   £ _____

10   By how many tenths is $6\frac{1}{5}$ greater than $5\frac{1}{2}$?   _____ $\overline{10}$

11   If 1m is divided into seven equal parts, what is the length of each part to the nearest centimetre?   _____ cm

12   The area of a rectangle is 205cm². Its width is 10cm. Find its length.

Ⓒ   Schofield & Sims   Answer

1   How many thousandths must be added to 4.206 to make 5? Write the answer as a decimal.   _____

2   Freya saves 8p per week for a year. How much are her total savings?   £ _____

3   A train journey takes 2h 35min. If a train arrives at 21:05, what was the time of its departure?   _____

4   There are 50 sheets of paper in a pack. How many packs can be made from twenty thousand sheets?   _____

5   ABCD is a square with sides measuring 9cm. Find

      a   the area of the square   a _____

      b   the area of the shaded parallelogram.   b _____

6   The price of a radio is £60. By how much is its price increased if it is paid for in eight equal instalments of £9 each?   £ _____

7   A car travelled at an average speed of 90km/h for $1\frac{1}{2}$h. What distance did it travel?   _____ km

8   The diagram shows how Emma's holiday money is spent during a week in France. What percentage is spent on

      a   food   a _____ %

      b   tourist attractions?   b _____ %

      c   If the total holiday money is £125, how much is not spent?   c £ _____
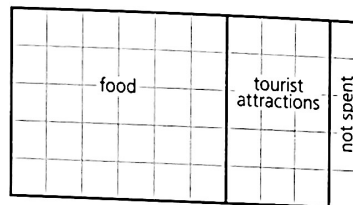
9   Three bananas have a mass of 400g. How many bananas will give a mass of 2.4kg?   _____

10   Nathan spent $\frac{1}{4}$ of his money on sweets and $\frac{1}{2}$ of the remainder on bus fares. What fraction of his money was left?   _____

11   Find the difference between 7 + 3 × 5 and (7 + 3) × 5.   _____

12   Find

      a   the area of the bottom of the box   a _____

      b   the volume of the box.   b _____

In each case give the unit of measurement.
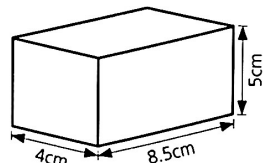
A Answer

1   $3^4 = 3 \times 3 \times 3 \times 3 =$ _____

2   $6.09 \times 7 =$ _____

3   three 10ps + seven 5ps = £0.73 –   p   _____ p

4   20% of 3kg 600g =   g   _____ g

5   $\frac{3}{10} + \frac{7}{10} + \frac{9}{10} =$ _____

6   $\frac{9072}{9} =$ _____

7   1.750l –   ml = 800ml   _____ ml

8   $x + x + x + x = 108$. Find the value of x.   _____

9   £2.08 =   2ps   _____ 2ps

10   285min =   h   min   _____ h   _____ min

11   a $\frac{4}{5} =$ %   a _____ %

      b $\frac{3}{10} =$ %   b _____ %

12   $(3 \times 56p) + (2 \times 56p) =$ £ _____

B Answer

1   Write as a decimal the sum of 7 tenths and 39 hundredths.   _____

2   Write the year 2016 using Roman numerals.   _____

3   By how many grams is 2.345kg less than $2\frac{1}{2}$kg?   _____ g
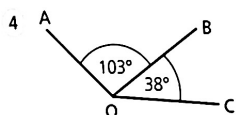
4   Calculate the reflex angle AOC.   _____ °

5   What is the annual interest on £650 at 5%?   £ _____

6   A car travels 28km in 30min. Find its speed in km/h.   _____ km/h

7   Write in digits the date

      a 6 months later than 1 Oct. 03   a _____

      b 4 months before 1 Mar. 96.   b _____

8   750ml of vegetable oil cost 72p. Find the price per litre.   _____ p

9   A shelf measures 5m long and 20cm wide. Find its area in m².   _____ m²

10   What is the missing amount of money?   £ _____
       1.0 9
    8) £ _____

11   Approximate

      a 199503 to the nearest 1000   a _____

      b 7kg 350g to the nearest $\frac{1}{2}$kg.   b _____ kg
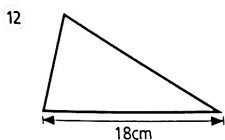
12   The base of this triangle is double the height. Find the area of the triangle.   18cm   _____
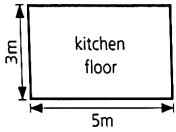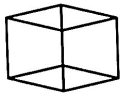
C Answer

1   A bottle holds 150ml. Find in litres the contents of 20 bottles.   _____ l

2   300 people attended a concert. 63% were adults and the remainder children.

      a What percentage were children?   a _____ %

      b How many adults were present?   b _____

3   The mean height of three children is 130cm. The heights of two of the children are 105cm and 140cm respectively. Find the height of the third child.   _____ cm

4   Find the change from £2 and 50p after spending 93p, £1.17 and 28p.   _____ p

5   $1.8 \times 0.7 = 1.26$
    Now write the answers to

      a 0.18×0.7 a _____

      b 1.8×70 b _____
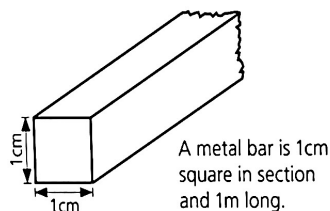
6   A metal bar is 1cm square in section and 1m long.
    1cm   1cm

      a How many cm cubes can be cut from it?   a _____

      b Write the volume of the bar in cm³.   b _____ cm³

7   The price of 250g of butter was increased from 60p to 66p. Find the increase as a percentage of the original price.   _____ %

8   A plan is drawn to the scale of 1mm to 50m. What distance in kilometres is represented by a line 10cm long?   _____ km

9   Eight kittens of equal mass together have a mass of 7kg 400g.

      a Find the mass in grams of four of the kittens.   a _____ g

      b What fraction of the total mass is the mass of three of the kittens?   b _____

10   kitchen floor   3m   5m   How many square tiles with sides 10cm are required to cover the kitchen floor?   _____

11   Five magazines cost £3.78. Find the cost of one magazine to the nearest penny.   _____ p

12   A skeleton model of a cube with sides 6cm is made by fastening together lengths of straws. Find the total length required.   _____ cm

Schofield & Sims

A

Answer

1. Write in digits, five hundred and two thousand one hundred and four. _____

2. $7.3 = 10 \times$ ▨ _____

3. £5 – (£3.66 + 54p) = ▨ p _____ p

4. $\frac{1}{3}$ of 2.850l = ▨ ml _____ ml

5. 9.6cm – 58mm = ▨ mm _____ mm

6. 1% of 23.5kg = ▨ g _____ g

7. 1000 – (8 × 9) = _____

8. 350g + 725g + 875g = ▨ kg _____ kg

9. $1\frac{1}{4} + \frac{7}{8} - \frac{1}{2} =$ _____

10. a 5% of £36.00 = **a** £ _____

    b $2\frac{1}{2}$% of £36.00 = **b** _____ p

11. $10 \times y = 0.35$. Find the value of y. _____

12. $\frac{£21.56}{7} =$ **£** _____

B

Answer
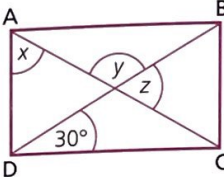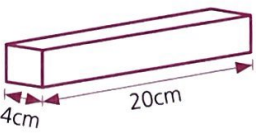
1. Write 35 out of 50 as

   a a fraction in its simplest form **a** _____

   b a percentage. **b** _____ %

2. By how many degrees does the temperature rise from –3°C to 9°C? _____ °C

3. $x = 25 – 12 \times 2$ $y = (25 – 12) \times 2$
   Find the value of a x b y c $y – x$. **a** ___ **b** ___ **c** ___

4. Find the change from a £10 note after paying for three hot chocolates at £2.90 each. **£** _____

5. By how many minutes is $2\frac{3}{4}$h longer than 1h 55min? _____ min

6. 8.25l of juice is needed to fill 10 bottles. How many millilitres of juice are in each bottle? _____ ml

7. $\frac{1}{2} = 0.5$; $\frac{1}{4} = 0.25$
   Write $\frac{1}{8}$ as a decimal fraction. _____

8. What number is 17 less than –9? _____

9. What decimal fraction when multiplied by 9 gives 6.3 as the answer? _____

10. Which of these numbers are factors of 64?

    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

    _____

11. Material costs £7.86 per metre. Find to the nearest penny the cost of 20cm. **£** _____

12. The perimeter of this rhombus is 15.6cm. Find the length of one side in millimetres. _____ mm

    rhombus

C

Answer
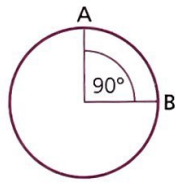
1. A joint of meat had a mass of 2kg 700g. 10% of its mass was lost in cooking. Find the loss in grams. _____ g

2. A shop opens from 8:30 a.m. to noon and 1:30 p.m. to 6 p.m.

   a How many hours is the shop open? **a** _____ h

   b What fraction of the day is it open? **b** _____

3. A ____ B AC and BD are the diagonals of the rectangle and ∠ BDC is 30°.

   x ... y ... z ... 30°

   D ____ C

   Find the angles marked x, y and z. ∠ x _____ ° ∠ y _____ ° ∠ z _____ °

4. 25% of a sum of money is £9.76. What is $12\frac{1}{2}$% of this amount? **£** _____

5. Place a decimal point in each of these numbers so that the value of the digit 9 is 9 thousandths. **a** _____ **b** _____ **c** _____

   a 309   b 79   c 2009

6. Water from a full $\frac{1}{2}$l jug was poured into a bowl. When the bowl was filled there were 115ml left. What was the capacity of the bowl in cm³? _____ cm³

7. An apricot costs 34p. How much is saved per apricot by buying a pack of six for £1.92? _____ p

8. In one week, $\frac{1}{4}$ million people watched a football match. If 80% of the people were female, how many were male? _____

9. A metal bar is 20cm long with a 4cm wide square cross-section. Find its volume. _____

   20cm 4cm

10. The approximate distance by road from London to Glasgow is 623km. How long to the nearest $\frac{1}{2}$h will it take David to make the journey if his average speed is 80km/h? _____ h

11. By how much is 10% of £25 greater than 9% of the same amount? _____ p

12. A garden consists of an area of grass 9m by 6.5m surrounded by a path 50cm wide. Find

    grass

    a the length **a** _____ m

    b the breadth **b** _____ m

    c the area of the garden. **c** _____

1 $2.703 = \dfrac{}{10} + \dfrac{}{1000}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}}$
10   1000

2 $\frac{4}{5}$ of 1.5kg = ☐ g   _____ g

3 £0.76 × 30 =   £ _____

4 50 000 − 970 =   _____

5 2h 37min + 7h 53min = ☐ h   _____ h

6 2l 700ml × 8 = ☐ l ☐ ml   _____ l _____ ml

7 $10^4 = 10 \times 10 \times 10 \times 10 =$ ☐   _____

8 two 50ps + three 20ps + ten 5ps = £ ☐   £ _____

9 a 27p = ☐ % of £1.00   a _____ %

    b 35cm = ☐ % of 1m   b _____ %

10 $4\frac{3}{8} \times 7 =$ _____

11 a 50% of £3.96 =   a £ _____

    b 75% of £9.00 =   b £ _____

12 Write as decimal fractions.

    a $\frac{2}{5}$ a _____

    b $\frac{3}{8}$ b _____

    c 79%   c _____

B   Answer

1 By how many is 1.4 million greater than nine hundred thousand?   _____

2 Subtract 37p from the total of 29p, 21p and 4p.   _____ p

3 What mass in kilograms is six times 4kg 300g?   _____ kg

4 By how many times is 8.3 greater than 0.083?   _____

5 What fraction in simplest form is equal to

    a 16%   b 45%?   a _____ b _____

6 10 sausages cost £2.90. Find the cost of

    a one sausage   a _____ p

    b three sausages.   b _____ p

7 A line is 49mm longer than the line AB. What is the length of the line in millimetres?   _____ mm

A   B

←————— 7cm 5mm —————→

8 How many times is 2.5 contained in 100?   _____

9 How many days inclusive from 19 Mar. 2006 to 5 Apr. 2006?   _____

10 $\frac{108.9}{6}$ Write the answer to the nearest whole number.   _____

11 Find the cost of 1.3kg at 20p per 100g.   £ _____

12 The perimeter of a rectangle is 85cm. Its length is 28cm. Find its width.   _____ cm

---

1 If £1.00 can be exchanged for €1.38, how many euros are received for £50?   € _____

2 When a number is divided by 7 the answer is $208\frac{5}{7}$. Find the number.   _____

3 A vase holds 5.6l of water. What is the volume of the vase in cm³?   _____ cm³

4 Which of these fractions are

    a greater than $\frac{1}{2}$ a _____

    b less than $\frac{1}{4}$?   b _____

| $\frac{3}{8}$ | $\frac{1}{5}$ | $\frac{7}{10}$ | $\frac{5}{12}$ | $\frac{1}{6}$ | $\frac{3}{5}$ | $\frac{1}{3}$ | $\frac{8}{12}$ |

5 Four plants are given 5ml plant food daily. How many days will a 0.3l bottle of plant food last?   _____

6

    a What fraction of the circumference of the circle is the arc AB?   a _____

    b If the angle at the centre were 40°, what fraction of the circumference would be its arc?   b _____

7 On 21 December the sun rises at 08:03 and sets at 15:50. How many hours and minutes of daylight are there on this day?   _____ h _____ min

8 Megan saved €10 every week for a year. Her dad then gave her a gift of 20% of her savings. How much did her dad give her?   € _____

9 A piece of ribbon 1m 36cm long is cut into two pieces so that one piece is three times as long as the other. Find the length of each piece.   _____ cm _____ cm

10 Which of the triangles A, B and C have the same area?   _____

	A	B	C
base	8cm	9cm	10cm
height	6cm	4cm	4.8cm

11 Point A is at (−2, 1). Write the coordinates of its reflection in the x-axis (the horizontal axis).   (_____ , _____)
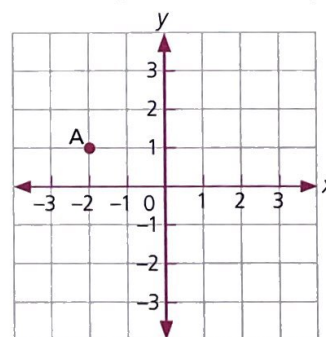
12 A point at (−3, −3) is translated five squares to the right and four squares up. What are its new coordinates?   (_____ , _____)

A

		Answer
1	a $2^5 = 2 \times 2 \times 2 \times 2 \times 2 =$	a _____
	b $10^5 =$	b _____
2	five 5ps + seven 10ps – nine 2ps =	_____ p
3	$(73 + 9) = 150 -$	_____
4	10.085km = m	_____ m
5	$\frac{y}{100} = 10.64$. Find the value of y.	_____
6	6.358 = 63 tenths + thousandths	_____ thousandths
7	550g × 6 = kg	_____ kg
8	£36.50 ÷ 10 = £	£ _____
9	75° + 65° + 90° + ° = 360°	_____ °
10	$\frac{3}{10}$ of 0.3m = cm	_____ cm
11	8% of £3.00 = p	_____ p
12	17.2 ÷ 2 =	_____

B

		Answer
1	Write these improper fractions as mixed numbers. a $\frac{74}{5}$ b $\frac{39}{7}$	a _____ b _____
2	Find in litres the total of 830ml, 360ml and 170ml.	_____ l
3	Of these numbers which is a the largest b the smallest?	a _____ b _____
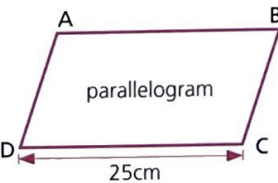
3.03   3.33   3.3   3.333

4	Which year is MCMXCIX?	_____
5	Write as a fraction in its simplest form. a 15mm of 15cm b 25min of 1h	a _____ b _____
6	Find the difference between 0.394 and 0.4.	_____
7	Which of these numbers are multiples of both 5 and 8?	

16   25   40   64   90   120

8	$\frac{3}{8}$ of a sum of money is 45p. Find $\frac{1}{2}$ of the sum of money.	_____ p
9	Find to the nearest centimetre one seventh of $6\frac{1}{4}$ m.	_____ cm
10	What sum of money is 200% of £170?	£ _____
11	Find the cost of 2.5kg at 74p per 500g.	£ _____
12		

A _____ B The perimeter of this parallelogram is 72cm.

parallelogram

D _____ C
25cm

Find the length of the sides AD and BC. _____ cm

C
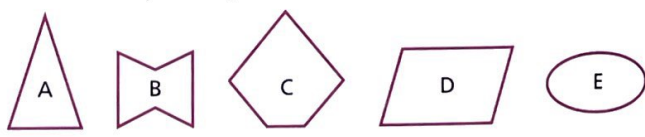
		Answer
1	By how many is $(10^3 + 16)$ greater than $(10^2 + 16)$?	_____
2	George's date of birth is 27 Nov. 04. How old will he be in years and months on 1 Sept. 2020?	_____ yr _____ mth
3	Sophie received a gift of £16. She saved 90% of the money and spent the rest. a What percentage did she spend? b How much did she save?	a _____ % b £ _____
4	Each of the equal angles in this isosceles triangle is twice the size of the third angle. Find the size of a the third angle b the equal angles at the base.	a _____ ° b _____ °

x y

5	A line 10cm long is drawn to represent a distance of 3km. To what scale is the line drawn?	_____ cm to _____ m
6	Potatoes £1.40 for a 3kg bag or 24p per $\frac{1}{2}$ kg — How much money is saved by buying 6kg of potatoes in bags?	_____ p
7	A rectangular plot of ground measures 19.7m long and 13.4m wide. Round each measurement to the nearest metre and then find the approximate area of the plot.	_____
8	Which of these shapes have two axes of symmetry?	_____

A   B   C   D   E

9	There were three candidates A, B and C in an election. Of the total possible votes A polled $\frac{1}{4}$, B polled $\frac{1}{6}$ and C polled $\frac{1}{3}$. a Which candidate won the election? b What fraction of the electors did not vote?	a _____ b _____
10	$x = 8 \times 4 + 4$ $y = 8 \times (4 + 4)$ Find the value of a x b y c $y - x$.	a _____ b _____ c _____
11	The price of a pen was increased from 30p to 36p. Find the increase as a percentage of the original price.	_____ %
12	Find in millimetres the diameter of a circle that has the radius 7.7cm.	_____ mm

1   1.4 million + 0.3 million =   _____ million

2   1000 × ____ = 300   _____

3   a   5% of £30 =   a £ _____

     b   40% of £50 =   b £ _____

4   2.050l − ____ ml = $1\frac{1}{2}$l   _____ ml

5   2 + 5 × 5 − 7 =   _____

6   6 × 9 × 5 × 4 =   _____

7 $\frac{4.56m}{8}$ = ____ cm   _____ cm

8   a   0.65 = ____ % = $\overline{20}$ a   ____ % = $\frac{\_\_}{20}$

     b   0.12 = ____ % = $\frac{3}{\_\_}$ b   ____ % = $\frac{3}{\_\_}$

9   7h − 3h 28min = ____ h ____ min   ____ h ____ min

10   1.34 + ____ = 1.876   _____

11   9.072 × 7 =   _____

12   £5.00 ÷ 6 = ____ p r ____ p   ____ p r ____ p

B   Answer

1   Take the sum of $\frac{2}{3}$ and $\frac{5}{6}$ from 2.   _____

2   How many times is 600g contained in 4.8kg?   _____

3   £   Find the missing
    4 . 7   4   sum of money.   £ _____
    −   .
       1 . 9   0

4   How many days inclusive from 23 Nov. to 9 Dec?   _____

5   Find the reflex angle to an angle of 63°.   _____ °

6   To the total of 850ml and 950ml add 1.6l. Give the answer in litres.   _____ l

7   What percentage of

     a   £400 is £20   a _____ %

     b   1 tonne is 250kg?   b _____ %

8   Write the year 1066 using Roman numerals.   _____

9   40% of a sum of money is 60p. Find the whole amount.   £ _____

10   Which of these decimal fractions equals $\frac{1}{8}$?

     | 0.8   0.15   0.25   0.125 | _____

11   Divide £10.00 by 3. Give the answer to the nearest penny.   £ _____

12   A piece of paper is 210mm by 30cm. Find its area in cm².   _____ cm²

---

1   By how many is (3 × 10³) less than five thousand?   _____

2   The mass of a 5p coin is 3.25g. What is the value of the 5ps in a bag if their mass is 0.325kg?   £ _____

3   Of 240 children in a school, 180 bring a packed lunch. Find the percentage of children who have school lunches.   _____ %

4   Find to the nearest kilometre the distance by road from Alton to Bigby.   _____ km

2.6km   1.4km   3.9km   Alton   Bigby

5   The mean temperature over four consecutive days was 17°C. For three of the days the temperatures were 16°, 14° and 18° respectively. What was the temperature on the fourth day?   _____ °C

6   Find the value of 7 − 3 × 2 + 10.   _____

7   In this chart two of the prices, marked x and y, are missing. What are they?   x _____ p   y _____ p

mass	100g	150g	200g	300g	400g
price	18p	27p	x	54p	y

8   Maisie saves £7.50 in five months. If she continues to save at the same rate, how much will she have saved in

     a   7 months   a £ _____

     b   1 year?   b £ _____

9
     a   What kind of triangle is added to the rectangle to make the shape?   a _____

     b   Find the area of the shape.   b _____

10
     The diameter of each circle is 15.8cm. What is the distance in millimetres between the two centres?   _____ mm

11   Yan scored 19 out of 20 in a test. What is his score as a percentage?   _____ %

12   A hollow cube has sides measuring 20cm. If the cube is half filled with water, what is the mass of the water in kilograms?   _____ kg

PROGRESS TEST 1

Write the numbers 1 to 20 down the side of a piece of paper.
Write alongside these numbers the **answers only** to the following questions.
Work as quickly as you can. Time allowed – **10 minutes**.

1   Write in words the number which is equal to $(5 \times 10^3) + (7 \times 10) + 2$.

2   How many times is 1083 greater than 1.083?

3   How many 5ps are given in exchange for the coins shown below?

(50p) (50p) (20p) (10p) (10p) (2p) (2p) (1p)

4   8.15l – 800mL. Write the answer in litres.

5   $\frac{x}{9} = 7$. Find the value of x.

6   By how many degrees is the angle marked x in the parallelogram less than the angle marked y?
(parallelogram with angles x, y and 56°)

7   The price of a game was increased from £20 to £25.
What is the increase as a percentage of the original price?

8   A line 8cm long represents a distance of 320m. The scale to which the line is drawn is 1mm to   m.

9   Write as a mixed number the difference between 3 and 0.25.

10   $x = 10 \times 8 - 5$ $y = 10 \times (8 - 5)$ Find the value of   a x b y c $x - y$.

11 | sweets | book | savings bank |
Hollie had £4.20. The diagram shows how she used it.
How much money did she put into the savings bank?

12   The number of people living in a small town was 19 097. In five years the population decreased by 10%.
Find the decrease to the nearest whole number.

13   The area of a triangle is 32.2cm². Its height is 7cm. Find the length of the base.

14
	depart	arrive
A	10:20	13:55
B	11:25	14:15

This timetable gives the times of two trains from London to Darlington.
Which train is quickest and by how many minutes?

15   A pack of eight cartons of juice costs £3.75. Find to the nearest penny the cost of one carton.

16   Two of the angles in a quadrilateral are 89°, another angle is 91°.

  a What is the size of the fourth angle?

  b Which three of these shapes could the quadrilateral be?

  | parallelogram   rhombus   rectangle   trapezium |

17   The perimeter of a rectangular hall is 36m. The width measures one third of the length. Find the length of the hall.

18   $\frac{5}{6}$ of a sum of money is £10.40. What is the whole amount?

19   A car travels at a speed of 45km/h for 1h. How far did it travel in 20min?

20   Write in centimetres the diameter of a circle with a radius of 128mm.

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You will work through Progress Test 1 at **four** different times – once at the end of Section 1, then again after you have completed each of Section 2 Test 4, Test 8 and Test 11.

When you first complete the test:
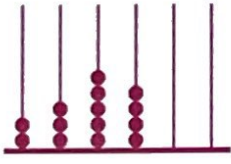
a colour the first column to show the number of answers correct out of 20

b enter the date.

Each time you take the test, enter the result and the date in the marked columns.

number of answers correct	1st	2nd	3rd	4th
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
0				
date				

SECTION 2 | Test 1

A — Answer
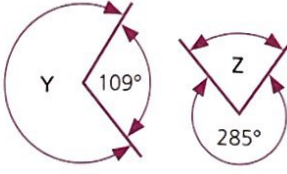
1. Write in words the number shown on the abacus. (U)
_____

2. Add 1.0, 0.1 and 0.001.
_____

3. 3375mm = ___ m _____ m

4. ___ × 10 = 498 700
_____

5. $\frac{1}{2} \times \frac{1}{2} =$
_____

6. 8kg – 6.075kg = ___ kg _____ kg

7. 6 × 5 × 9 =
_____

8. $2\frac{1}{4}$ min = ___ s _____ s

9. $\frac{3}{5}$ of £45 = £ £_____

10. $\frac{3}{12} + \frac{1}{6} =$
_____

11. $3^3 - 2^3 =$
_____

12. Find 15% of £2.00. _____ p

B — Answer

1. 1m costs £1.50. Find the cost of 10cm. _____ p

2. Write $\frac{12}{16}$ in its simplest form.
_____

3. To the difference between £5.00 and £2.55 add six 2ps. £_____

4. A square has a perimeter of 320mm. Find its area in cm². _____ cm²

5. How many times can 0.25 be taken from 1?
_____

6. 5 miles ≈ 8km. About how many kilometres is 45 miles? _____ km

7. When a watering can is $\frac{3}{4}$ full it holds 900ml. How much does it hold in litres when it is full? _____ l

8. What percentage of £6 is £1.50? _____ %

9. Find the volume in m³ of a room 5m long, 4m wide and 2.5m high. _____ m³

10. What fraction in its simplest form is equal to 12.5%?
_____

11. How many times heavier is 7.5kg than 75g?
_____

12. Write these fractions in order of size, the largest first.
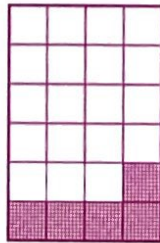
$\frac{2}{3}$	$\frac{3}{4}$	$\frac{7}{12}$	$\frac{5}{6}$

_____

C — Answer
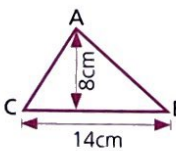
1. Six 30cm candles are placed end to end. How many millimetres short of 2m is their total length? _____ mm

2. In which century did each of these years fall? Write the answers in digits.
   a 1676 a_____
   b 1918 b_____

3. Find
   a the reflex angle Y (Y 109°) a_____ °
   b the acute angle Z. (Z 285°) b_____ °

4. | 36758 | Write this number and use a decimal point to make the value of the number
   a between 360 and 370 a_____
   b between 30 and 40. b_____

5. Which number when divided by 6 has $\frac{1}{3}$ as the answer?
_____

6. Which of these numbers have 2, 3 and 4 as factors?

12	17	18	24	27	31	36

_____

7. Harry walks at an average speed of 6km/h. How many hours will he take to walk 15km? _____ h

8. A plan is drawn to a scale of 1mm to 10cm. Write the scale as a fraction.
_____

9. There are 24 small squares in the diagram. Find as a fraction in its simplest form the part which is
   a shaded ☐ a_____
   b unshaded ☐ b_____
   c patterned ▦ c_____

10. Round each amount to the nearest £ and then find the approximate total.

£5.75	£3.25	£2.99

£_____

11. Find the area of
   a the triangle ABC (A, 8cm, C, 14cm, B) a_____
   b a triangle having the same base but half the height of ABC b_____

12. 346 × 18 = 6228
   Find a 346 × 0.18 a_____
         b 34.6 × 1.8. b_____

18

1 $4 \times y = 96$ Find the value of y.

_____

2 £3.78 + £2.55 =

£ _____

3 35min × 5 =   h   min

h _____ min

4 £   + £2.37 = £6.00

£ _____

5 1 tonne (t) = 1000kg
3080kg =   t   kg

____ t _____ kg

6 $2\frac{3}{8} - 1\frac{1}{4} =$

_____

7 $4.804 = \frac{}{1000}$

_____ 1000

8 a $\frac{1}{6}$ of 156 =

a _____

b $\frac{1}{12}$ of 156 =

b _____

9 a 20p of £2.00 =   %

a _____ %

b 20p of £4.00 =   %

b _____ %

10 $4^3 + 4^2 =$

_____

11 5057m +   m = 5.750km

_____ m

12 $\frac{£3.50}{10} \times 3 =$

£ _____

B

Answer

1 Write in digits, seven hundred thousand seven hundred.

_____

2 Increase the sum of 54p and 18p by £1.08.

£ _____

3 By how many millimetres is 2620mm less than 3m?

_____ mm

4 One ruler cost 18p.
Find the cost of   a 10

a £ _____

    b 30.

b £ _____

5 Write the next two numbers in this sequence.
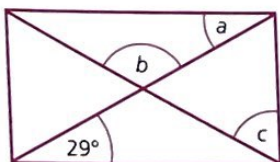
50, 5, 0.5,   ,

_____

6 How many times is 300g contained in 9kg?

_____

7 Write $\frac{3}{5}$ as a decimal fraction.

_____

8 Increase   a £1.00 by 13%

a £ _____

    b £1.00 by 9%.

b £ _____

9 Find the mean of these numbers.

| 16 | 14 | 17 | 13 |

_____

10 A rectangle is 4.5m long and 0.5m wide.

Find   a the perimeter

a _____

    b the area.

b _____

Write the unit of measurement in each case.

11 Find the difference between 2.75 million and 300 000.

_____

12

For the rectangle, find ∠ a

∠ a _____ °

∠ b

∠ b _____ °

and ∠ c.

∠ c _____ °

C

Answer

1 Find the time taken in hours and minutes for a journey of 300km at an average speed of 40km/h.

____ h ____ min

2 Mr Khan was given a 10% reduction on a car costing €3000. How much did he pay for the car?

€ _____

3 Six jugs each holding 850ml were filled from a cask containing 10l. Write in litres the quantity remaining.

l

4 Estimate which of these angles is

a 87°   b 135°

c 278°   d 45°.

a _____ b _____

c _____ d _____
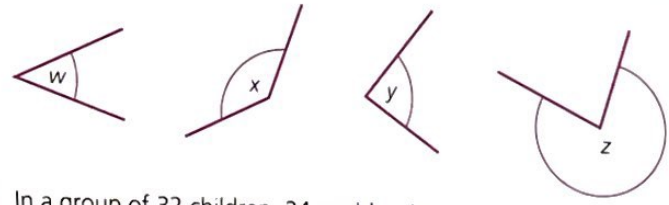
5 In a group of 32 children, 24 could swim. What percentage of the children could not swim?

_____ %

6 Find in millimetres

a the total of the lengths AB and AC

a _____ mm

b the difference in length between AB and AC.

b _____ mm

7 1 mile ≈ 1.6km. About how many kilometres is 20 miles?

_____ km

8 On parents' evening, 4 out of every 5 parents who attended came by car. 100 parents attended.

a How many came by car?

a _____

b What fraction did not?

b _____

9 Find the length of the rectangle in metres.

area 7.5m²   1.5m

_____ m
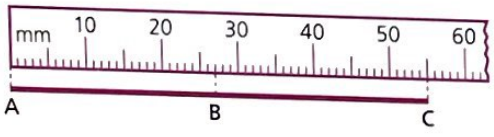
10 Louise works from 6:45 a.m. to 10:15 a.m. and from 3:15 p.m. to 6:45 p.m. How many hours is that each day?

_____ h

11

The volume of the cuboid is 150m³. Find its height in metres.

5m   4m

_____ m

12 A car travelled 50 106km in three years. Find to the nearest 1000km the mean distance travelled per year.

_____ km

SECTION 2 | Test 3

A

		Answer
1	£0.07 + £7.00 + £0.70 =	£ _____
2	$(7 \times 10^3) + (5 \times 10^2) + (3 \times 10^1) =$	_____
3	■ p × 10 = £1.60 =	_____ p
4	5 + 7 × 3 − 2 =	_____
5	1.36 ÷ 8 =	_____
6	(4 × 96) + (6 × 96) =	_____
7	360° − (145° + 55°) =	_____ °
8	$3l\ 250ml - \frac{3}{4}l = ■\ l$	_____ l
9	3.593 + 0.407 =	_____
10	80% of 400 =	_____
11	$\frac{2}{3} + \frac{1}{6} =$	_____
12	Subtract 12 from 7.	_____

B

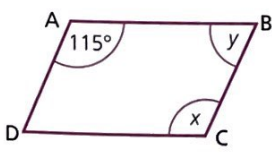|		Answer
1	What number is one more than 99 999?	_____
2	By how many seconds is 70s less than $1\frac{1}{4}$ min?	_____ s
3	700ml cost £0.91. Find the cost per litre.	£ _____
4	The length of a rectangle is 15cm and its perimeter is 46cm. Find	
	a the width	a _____
	b the area.	b _____
5	Write 1mm of 2m as a fraction.	_____
6	Divide the total of £1.17 and £0.28 by 5.	£ _____
7	4 × y = 4y. Find the value of y when 4y = 14.	_____
8	Approximate	
	a 9493g to the nearest kilogram	a _____ kg
	b 305 426 to the nearest 10 000.	b _____
9	Write as a decimal the sum of 5, $\frac{3}{10}$ and $\frac{84}{100}$.	_____
10	What percentage is 6cm of 2m?	_____ %
11	Write the next two numbers in this sequence. $\frac{1}{10}, \frac{1}{5}, \frac{3}{10}, \frac{2}{5}, \frac{1}{2}, ■, ■$	_____
12	Write 125ml to 1l as	
	a a fraction in its simplest form	a _____
	b a decimal fraction.	b _____

C

		Answer
1	The price of a 32p packet of sweets is increased by 25%. What is the new price?	_____ p
2	**Funfair** admission: £4.20 children: half price Find the total cost for two adults and two children.	£ _____
3	The length of a garage is 5m. The overall length of a car is 4445mm. By how many millimetres is the garage longer than the car?	_____ mm
4	Claire is employed for 36 hours from Monday to Friday (inclusive). Find in hours and minutes the mean time she works each day.	_____ h _____ min
5	From a gift of £10, Ahmed received £3.70. His three friends shared the remainder equally. How much did each friend receive?	£ _____
6	A packet of weed-killer will treat 100m² of lawn. How many packets are needed to treat a square lawn with 20m sides?	_____
7	triangle x 96° 42° ■ ° / triangle y 60° 60° ■ ° / triangle z 90° 57° ■ ° Two of the angles in each of the triangles x, y and z are given. Find the third angle for each triangle.	x _____ ° / y _____ ° / z _____ °
8	A map is drawn to a scale of 1cm to 1km. Find the distance in kilometres represented by a line 42mm long.	_____ km
9	F = {16, 4, ■, 1, 64, 2, ■} F = the set of factors of 64. Find the missing factors.	_____
10	Which triangle, A or B, has the greater area and by how many cm²?	by _____ cm²

Triangle A: height 6cm, base 9cm. Triangle B: height 6cm, base 8cm.

		Answer
11	1l of water has the same volume as 1000cm³. What are the volumes in cm³ of	
	a 200ml	a _____ cm³
	b 1.7l?	b _____ cm³
12	A map is drawn to a scale of 1cm to 1km. Express this scale	
	a as a fraction	a _____
	b as a ratio.	b _____

1 $(4 \times 9^2) =$ _____

2 $0.9 - 0.09 =$ _____

3 $15p \times 4 = £$ ____ £ _____

4 $3694 \div 5 =$ ____ r ____ r _____

5 a $0.12 =$ ____ % a _____ %

    b $0.125 =$ ____ % b _____ %

6 $2l -$ ____ ml $= 1.260l$ _____ ml

7 $\frac{1}{8}$ of $360° =$ _____ °

8 1m 90mm = ____ m _____ m

9 three 50ps + ____ 5ps $= £3.00 - £1.25$ _____ 5ps

10 11:33 a.m. to 1:27 p.m. = ____ h ____ min ____ h ____ min

11 $0.3 \times 0.5 =$ _____

12 Find a $\frac{1}{2}$ of $\frac{2}{3}$ a _____

        b $\frac{7}{8}$ of 4. b _____

B   Answer

1 How much is left when £1.67 is subtracted from £2.45? £ _____

2 Write as a decimal fraction.

    a $\frac{1}{4}$ a _____

    b $\frac{1}{8}$ b _____

3 Write the volume in cm³ of a bucket which holds 2.250l. _____ cm³

4 Find the difference between 100% of £5.00 and 1% of £5.00. £ _____

5 What number is one thousand less than 800000? _____

6 10 lollies cost £4.50. Find the cost of

    a one a _____ p

    b seven. b £ _____

7 How many times can 300ml be taken from 6l? _____

8 Which two consecutive numbers have a product of 72? _____

9 How many days inclusive from 14 December to 17 January? _____

10 Divide £5.00 by 9 to the nearest penny. _____ p

11 ABCD is a parallelogram. Find in degrees $\angle x$ $\angle x$ _____ °

    and $\angle y$. $\angle y$ _____ °

12 20% of a sum of money is 85p. What is the whole amount? £ _____
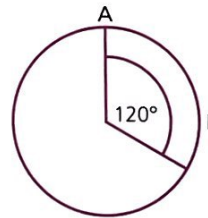
1 A jug holds 750ml. How many ml does it hold when it is $\frac{2}{3}$ full? _____ ml

2 The interior angles of triangles A, B and C are given. Name each of these triangles by its sides.

triangle A	60°	60°	60°
triangle B	80°	80°	20°
triangle C	30°	60°	90°

A _____
B _____
C _____

3 Car parking costs $4.00 per hour. How much does it cost to park for 3h 15min? $ _____

4 Round each of these numbers to the nearest whole number and then find the approximate total.

5.109	6.5	4.49	2.73

_____

5 The diagram shows how the children voted for their favourite sport. What percentage of the children voted for

    a swimming a _____ %

    b cycling? b _____ %

6 If 200 children voted, how many more voted for football than for cricket? _____

7 a What fraction of the circumference of the circle is the arc AB? a _____

    b If the angle at the centre were 240°, what fraction of the circumference would be its arc? b _____

8 Eight lengths each measuring 2m 40cm are cut from a 20m roll. What length in cm remains? _____ cm

9 Find the product of one-half and two-thirds and write the fraction in its simplest form. _____

10 In a freestyle swimming competition, Kai swam 200m in 1min 54.3s. How many seconds less than 2min was his time? _____ s

11 The diagram shows the distances between four friends' homes. How many metres is it from Sita's to Ellie's? _____ m

2.5km

Ahmed   0.75km   Sita   Ellie   1.24km   Joshua

12 The population of a town of 0.5 million fell by 50000. What was the percentage fall in population? _____ %

A

		Answer
1	36mm + 24mm + 54mm = ☐ cm	_____ cm
2	5l – (480ml × 5) = ☐ l	_____ l
3	☐ g × 100 = 6.5kg	_____ g
4	1 mile ≈ 1.6km ☐ miles ≈ 48km	_____ miles
5	2.750l ÷ 2 =	_____ l
6	60% of £2 = £	£ _____
7	0.97 × 3 =	_____
8	3h 50min × 6 = ☐ h ☐ min	_____ h _____ min
9	$\frac{1}{2} \times \frac{1}{4} =$	_____
10	$9^3 - 9 =$	_____
11	£30 ÷ 20 =	£ _____
12	£0.50 × 54 =	£ _____

B

		Answer
1	Write in words the number 40400.	_____

2 Which of these is

   a a square number — a _____

   b a prime number? — b _____

34	35	36	37	38	39

3 Divide £28 in the ratio 4:3. — £ _____ £ _____

4 Six toffees cost 90p. Find the cost of five toffees. — _____ p

5 Approximate

   a 0.830km to the nearest 100m — a _____ m

   b 4.080l to the nearest $\frac{1}{2}$l. — b _____ l

6 a How many 8cm lengths can be cut from a 5m length? — a _____

   b How many centimetres are left over? — b _____ cm

7 What fraction of 10 is $1\frac{1}{4}$? — _____

8 Write as a decimal fraction.

   a 19%   b $12\frac{1}{2}$% — a _____ b _____

9 298 seconds = ☐ min ☐ s — _____ min _____ s

10 6 + x + 0.029 = 6.03. Find x. — _____

11 What number must be added to 0.37 to make 4.57? — _____

12 Find the missing mass in grams.

$$5 . 3 \ 7 \ 0 \ \text{kg}$$
$$- \quad . \quad \quad \quad \text{kg}$$
$$4 . 4 \ 9 \ 0 \ \text{kg}$$

— _____ g

C

		Answer
1	20p is saved each week. How long will it take to save £2.60?	_____ wk

2 Find in metres the perimeter of this square. $1\frac{3}{4}$ m — _____ m

3 Which of these fractions is equal to

   a $12\frac{1}{2}$%   b $33\frac{1}{3}$%? — a _____ b _____

$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{6}$

4 Find the difference between 30 × 4p and 30 times 6p. — _____ p

5 WXYZ is a trapezium. Find in degrees

W 117°   117° X

Z   Y

   a ∠ XYZ — a _____ °

   b ∠ YZW. — b _____ °

6 Of the 300 people at a theme park, 99% went on the rollercoaster. How many people was that? — _____

7 Tom was allowed an average of 50p per day spending money for four days. Find how much he had to spend on the fourth day. — _____ p

day	1st	2nd	3rd	4th
spent	70p	40p	60p	

8 From Aberdeen to Leicester by road is approximately 700km. Find to the nearest hour the time taken by a truck if its average speed is 60km/h. — _____ h

9 This scale is taken from a map. Find the distance in kilometres represented by a line on the map measuring 3.5cm. — _____ km

mm
km 5 10 15 20 25 30

10 An equilateral triangle has a perimeter of 240mm. Find in centimetres

   a the length of one side — a _____ cm

   b the length of one side of a regular hexagon of the same perimeter. — b _____ cm

11 From this calendar find

   a the number of Fridays in the month — a _____

   b the date of the third Sunday in the month. — b _____

March					
Mon		7	14	21	28
Tues	1	8	15	22	29
Wed	2	9	16	23	30
Thurs	3	10	17	24	31

12 Use the formula $A = \frac{bh}{2}$ to find the area of the triangle.

8cm   15.6cm — _____

A

1. $470 - 383 =$ _____

2. $250g \times 20 =$ _____ kg _____ kg

3. $765 \div 25 =$ _____ r _____ r

4. $2\frac{5}{8} + \frac{3}{4} =$ _____

5. $1 \div 0.2 =$ _____

6. $4m -$ _____ mm $= 3.180m$ _____ mm

7. $30 \times 1.6 =$ _____

8. From 7:19 a.m. to 8:15 a.m. = _____ min _____ min

9. $175ml \times 4 = 1l -$ _____ ml _____ ml

10. $36 - 9 \div 3 =$ _____

11. a 8.5% of £100 a £ _____

    b $12\frac{1}{2}\%$ of £10 b £ _____

12. $£2.63 \times 4 =$ £ _____

B Answer

1. Add together the largest and the smallest of these numbers.

   | 0.099 | 0.9 | 0.909 | 0.09 |
   _____

2. What percentage is

   a 9 of 18 a _____ %

   b 18 of 9? b _____ %

3. Write in digits the number which is ten thousand more than a million.
   _____

4. £2.57 plus £1.36 minus 24p = £ _____ £ _____

5. Write 20 thirds as

   a an improper fraction a _____

   b a mixed fraction. b _____

6. Find the area of a parallelogram with a base measuring 17cm and height of 5cm.
   _____

7. Find $\frac{1}{9}$ of 70. Write the answer to the nearest whole number.
   _____

8. 50g cost 65p. Find the cost of $\frac{1}{4}$kg. £ _____

9. How many 650g packets can be made from 65kg?
   _____

10. Write as a decimal fraction.

    a $\frac{9}{50}$ b $\frac{3}{20}$ c $\frac{3}{25}$ a _____ b _____ c _____

11. Find the difference in grams between 1% of 19kg and 1% of 20kg.
    _____ g

12. Increase £2.00 by 16%. £ _____
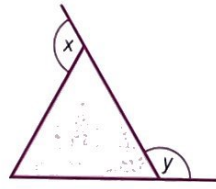
C Answer

1. A television licence costs £150 per year. How much is this per month? £ _____

2. ABC is a right-angled triangle. Find its area. _____

3. By how much is the product of $\frac{2}{3}$ and 3 less than the sum of $\frac{2}{3}$ and 3? _____

4. A $2\frac{1}{2}l$ container is $\frac{7}{10}$ full. What decimal fraction of 1l is required to fill it? _____ l

5. A plan is drawn to the scale of 1mm to 50cm. What fraction represents the scale? _____

6.

Broton	Cant	Witton
19:17	21:14	23:56

   From this bus timetable find the time taken from

   a Broton to Cant a _____ h _____ min

   b Cant to Witton b _____ h _____ min

   c Broton to Witton. c _____ h _____ min

7. A new pane of glass is to be fitted into this square window.

   a In how many different ways will it fit without the glass being turned over? a _____

   b How many lines of symmetry has a square? b _____

8. Find the missing numerators x, y and z in this set of equivalent fractions.
   $\{\frac{3}{5}, \frac{6}{10}, \frac{x}{15}, \frac{12}{20}, \frac{y}{25}, \frac{z}{30}\}$

   x _____

   y _____

   z _____

9. The triangle is equilateral. Find in degrees the measurement of $\angle x$ and $\angle y$.

   $\angle x$ _____ °

   $\angle y$ _____ °

10. Write the value of each:

    a $16 - 10 \div 2 + 1 =$ a _____

    b $(16 - 10) \div (2 + 1) =$ b _____

    c $(16 - 10) \div 2 + 1 =$ c _____

11. The price of $\frac{1}{2}$kg of carrots was increased from 30p to 36p. Find the increase as a percentage of the original price. _____ %

12. Round the sum of money to the nearest £ and then find an approximate answer.

    a $£19.87 \times 19$ a £ _____

    b $£126.24 \div 9$ b £ _____

A | Answer

1. $5.384 + 4.16 =$ _____

2. $4km - 272m = \boxed{}\,km$ _____ km

3. $£30 \times 27 =$ £ _____

4. $\frac{£5.18}{6} = \boxed{}\,p\,r\,\boxed{}\,p$ _____ p r _____ p

5. 1.5 million $= \boxed{}$ thousands _____ thousands

6. $(6 \times 10^5) + (1 \times 10^4) + (7 \times 10^2) + (4 \times 1) =$ _____

7. $0.75l = \boxed{}\,cm^3$ _____ cm³

8. $3 \times (5 + 1) - 10 \div 2 =$ _____

9. $\frac{1}{3} \times \frac{1}{3} =$ _____

10. Find $\frac{3}{8}$ of £36. £ _____

11. $\frac{48mm + 72mm}{4} = \boxed{}\,cm$ _____ cm

12. a 25% of $1.28l = \boxed{}\,ml$ a _____ ml
    b 75% of $1.28kg = \boxed{}\,g$ b _____ g

B | Answer

1. Divide 45kg in the ratio 7:8. _____ kg _____ kg

2. Find the product of 10 and 0.002. _____

3. One article costs 21p.
   Find the cost of   a   10   a £ _____
              b   50.   b £ _____

4. 1 mile ≈ 1.6km. About how many miles is 64km? _____ miles

5. a Increase £2.56 by 100%.   a £ _____
   b Decrease £2.40 by 50%.   b £ _____

6. By how many grams is twice 2.175kg less than 5kg? _____ g

7. How many seconds in   a $\frac{1}{3}$ min   a _____ s
              b 0.25min?   b _____ s

8. £5.60 is shared equally among eight children. Find one share. _____ p

9. Change to percentages.   a 0.13   a _____ %
                    b 0.35   b _____ %
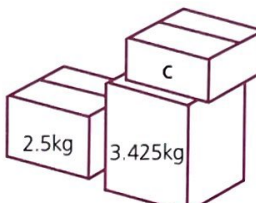
10. The area of a square card is 1m². Find in centimetres the length of one side. _____ cm

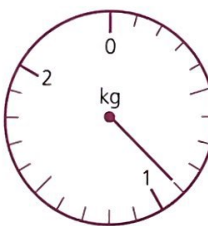11. 0.75 of a quantity has a mass of 3.36kg. Find the mass of 0.5 of the quantity. _____ kg

12. Find the sum of (4×0.7) and (0.7×6). _____
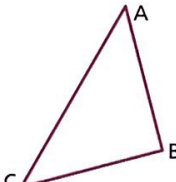
C | Answer

1. A book costs £2.40. In a sale it is to be sold at 75% of this price. How much will it be sold for? £ _____

2. The total mass of the three parcels is 7kg. Find in kilograms the mass of parcel C.
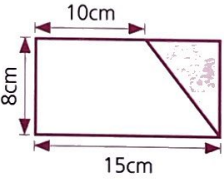   2.5kg   3.425kg   C _____ kg

3. Ali earns $5.50 per hour. What is his wage for a 30-hour week? $ _____

4. The scale reading shows the mass of 20 tomatoes. Find the average mass of one tomato. _____ g

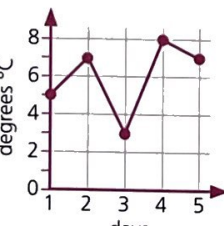5. Find the change from £10 after spending £3.60, £2.50 and 99p. £ _____

6. The right-angled triangle is an isosceles triangle. Find in degrees
   a ∠ CAB   a _____ °
   b ∠ BCA.   b _____ °

7. A packet of peas has a mass of 375g. Find in kilograms the mass of six packets. _____ kg

8. The shaded part is cut from this rectangular card. Find the area of the part that is cut off. _____
   10cm   8cm   15cm

9. Write the next two numbers in this sequence.
   24, 17, 10, 3, $\boxed{}$, $\boxed{}$ _____

10. A measurement of 38mm on a plan represents a distance of 38m. What would a 3cm line on the plan represent? _____ m

11. The graph shows the temperature for five days. Find the mean daily temperature. _____ °C

12. Which two of these fractions together equal
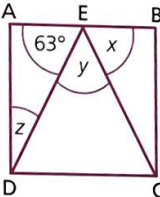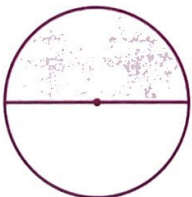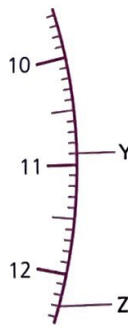   a $\frac{1}{2}$ b $\frac{3}{4}$?

$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{5}$	$\frac{2}{3}$	$\frac{3}{10}$	$\frac{1}{12}$

    a _____ and _____
    b _____ and _____

A

1 79 + 87 + ⬜ = 300

_____

2 10^6 = 10 × 10 × 10 × 10 × 10 × 10 =

_____

3 3h 20min – 1h 55min =   h   min

_____ h   _____ min

4 6l 515ml =   ml

_____ ml

5 £10.10 × 10 =

£ _____

6 0.75m + 350mm + 400mm =   m

_____ m

7 9.18 +   hundredths = 10

_____ hundredths

8 36 × 6p = £

£ _____

9 6% of 1kg =   g

_____ g

10 10^3 – 87 =

_____

11 7kg ÷ 8 =   g

_____ g

12 $y ÷ 5 = \frac{2}{5}$. Find the value of y.

_____

B   **Answer**

1 Write in digits the number one hundred
and eleven thousand and one.

_____

2 How much less than 1 tonne is 860kg?

_____ kg

3 How many £s are equal in value
to 10 000p?

£ _____

4 Which three consecutive numbers when
added together equal 21?

_____

5 Find a 1% of £75.00

a _____ p

    b 11% of £75.00.

b £ _____

6 20 cost £8. Find the cost of 15.

£ _____

7 Write 300ml of 0.5l as

a a fraction in its simplest form

a _____

b a percentage.

b _____ %

8 When $y = 2$, $6y = w - 8$.
Find the value of w.

_____

9 How many 400g packs can be filled
from 10kg?

_____

10 Write as a decimal. a $\frac{3}{4}$

a _____

        b $\frac{7}{8}$

b _____

11 Write the numbers between 0 and 40 of
which both 3 and 4 are factors.

_____

12 The length of a rectangle is twice its width.
The perimeter is 54cm. Find

a the length

a _____ cm

b the width.

b _____ cm

C   **Answer**

1 5% of a 4m roll of ribbon was used.
How many centimetres was that?

_____ cm

2 By how much is the product of $\frac{1}{2}$ and
$\frac{1}{4}$ less than the sum of $\frac{1}{2}$ and $\frac{1}{4}$?

_____

3 Four hamsters together have a
mass of 200g. How many hamsters
together have a mass of $2\frac{1}{2}$ kg?

_____

4 Find the nearest whole number.

a $\frac{51}{4}$

a _____

b 97 ÷ 8

b _____

c 156.6 ÷ 6

c _____

5 ABCD is a square.
E is the midpoint
of the side AB.
Find in degrees
the size of each
of the angles
x, y and z.

∠ x _____ °

∠ y _____ °

∠ z _____ °

6 £3.52 was received in change from £10
after buying six plants. Find the average
cost of a plant.

£ _____

7 A car travels 200km in 2h 30min.
Find its average speed in km/h.

_____ km/h

8 The circumference
of this circle is 22cm
and the radius is
3.5cm. Find the
perimeter of the
semicircle.

_____ cm

9 Find the cost of 2.25kg at £10 per $\frac{1}{2}$ kg.

£ _____

10 How many cubes with sides measuring
10cm each fit into a cube with sides
of 1m?

_____

11 This is part of the dial of a
stopwatch which measures
to one-tenth of a second.

a Write in seconds the
reading at Y

a Y _____ s

    at Z.

Z _____ s

b Write in seconds the
difference between the
readings at Y and Z.

b _____ s

12 In 4 weeks Jessica travelled 530km,
470km, 640km and 360km.
What was the average distance
she travelled per week?

_____ km

A | Answer

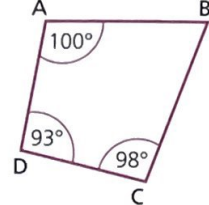1. $700\,000 +$ ___ $+ 2000 + 50 = 712\,050$

2. $8.5 - 7.05 =$

3. $2\frac{3}{4} \times 100 =$

4. $98° + 134° +$ ___ $° = 360°$ ___ °

5. £ ___ $\times 4 = £15.24$ £ ___

6. $3.079 +$ ___ thousandths $= 4$ ___ thousandths

7. $(£1.08 \times 10) + (£0.07 \times 6) =$ £ ___

8. $\frac{78}{x} = 3$. Find the value of x.

9. $34.86 = 10 \times$ ___

10. $\frac{4}{5} \times \frac{1}{2} =$

11. $1160g \times 5 =$ ___ kg ___ kg

12. From 06.12.12 to 18.01.13 inclusive = ___ days ___ d

B | Answer

1. Write 10 532 thousandths as a decimal. ___

2. How much less than 10 tonnes is 9t 470kg? ___ kg

3. 55 miles ≈ ___ km ___ km

4. Find in °C the difference between

   a 6°C and −3°C a ___ °C

   b −5°C and 4°C. b ___ °C

5. Divide 117 by 8. Write the answer as a mixed number. ___

6. Find the total of $(4 \times 16 \times 0)$ and $(4 \times 16 \times 1)$. ___

7. How much is 5% of £250? £ ___

8. The area of a rectangle is 1m². The breadth is 50cm. Find the length in metres. ___ m

9. 10 plums cost £2.70. Find the cost of three. ___ p

10. Write 12kg of 80kg

    a as a fraction in its simplest form a ___

    b as a percentage. b ___ %

11. How many kilometres and metres are equal to 0.75 of 6km? ___ km ___ m

12. Find in kilograms the mean mass.
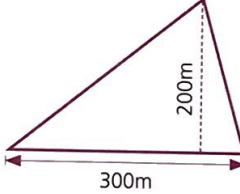
    | 2.1kg | 0.75kg | 2.25kg | 4.9kg |

    ___ kg

C | Answer

1. ABCD is a quadrilateral. Find ∠ ABC. ___ °

2. How many 40cm lengths can be cut from a 10m roll of tape? ___

3. Using a scale of 1mm to 0.5m, what length of line would represent 3m? ___ mm

4. The correct time is 12:05 a.m.

   Y ___ min
   Z ___ min

   How many minutes fast or slow is each of the 24-hour clocks?

5. 600 sheets of paper are used from five packs each holding 480 sheets. How many sheets are left? ___

6. The diagram is a plan of a field. Find the area of the field in m². ___ m²

7. $P = \{7, x, y, 17, z, 23\}$

   $P =$ the set of prime numbers between 6 and 24. Find the value of x, y and z.

   x ___
   y ___
   z ___

8. There are 65l of diesel in a tractor tank. If the fuel is used at the rate of 15l per hour, for how many hours and minutes can the tractor be used? ___ h ___ min

9. The area of the two given rectangles is 24cm². Find the length and breadth of two other rectangles X and Y each of which has an area of 24cm² and whose sides are whole centimetres.

   | length | 24cm | 12cm |
   | breadth | 1cm | 2cm |

   X ___ cm ___ cm
   Y ___ cm ___ cm

10. A roll of material 2.5m long is cut into three equal pieces. Find to the nearest centimetre the length of one piece. ___ cm

11. The cylinder holds 2l.

    a How many millilitres of water are there in the cylinder? a ___ ml

    b How many more millilitres are required to fill it? b ___ ml

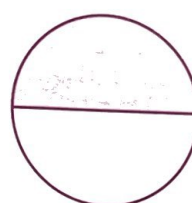12. Find the change from £10 after spending £2.46, £3.77 and £1.54. £ ___

A

Answer

1. ☐ miles ≈ 56km

_____ miles

2. $100 \times$ ☐ $= 59$

_____

3. $\frac{£48}{100} =$ ☐ p

_____ p

4. $2\frac{5}{8} + \frac{3}{10} + 1\frac{3}{8} =$

_____

5. 9kg = 7.355kg + ☐ kg

_____ kg

6. 0.04 + 0.7 + 0.009 = ☐ thousandths

_____ thousandths

7. £0.09 × 12 =

£ _____

8. a 7% of £13.00 =

   a _____ p

   b 19% of £8.00 =

   b £ _____

9. 557ml × 6 = ☐ l

_____ l

10. $\frac{1kg\ 350g \times 2}{10} =$ ☐ g

_____ g

11. £5.00 − (£2.46 + £1.59) = ☐ p

_____ p

12. $\frac{3}{5} \times \frac{2}{3} =$

_____

B

Answer

1. 30 cookies cost £2.40.
   Find the cost of one.

_____ p

2. x y
   53.057   How many times smaller is the
   5 marked y than the 5 marked x?

_____

3. From the sum of £4.65 and £3.35
   subtract £5.50.

   £ _____

4. Find the difference in centimetres
   between 153mm and 6.6cm.

_____ cm

5. Approximate

   a 15cm 7mm to the nearest 0.5cm

   a _____ cm

   b 9kg 75g to the nearest 0.5kg.

   b _____ kg

6. Find the product of $1\frac{2}{3}$ and 30.

_____

7. In how many years will the interest
   on £100 at 6% amount to £12?

_____

8. Find the difference between (17 × 10)
   and (1.7 × 10).

_____

9. Write $\frac{21}{50}$ as a decimal fraction.

_____

10. The area of a carpet is 58.5m².
    The length is 9m. Find the width.

_____ m

11. 20l of lemonade is poured in equal
    amounts into 50 bottles. How many
    millilitres are there in each bottle?

_____ ml

12. An aircraft travels 180km in 15min.
    Find its speed in kilometres per hour.

_____ km/h

C

Answer

1. Ryan spent £1.40 which was $\frac{5}{6}$ of
   his money. How much had he at first?   £ _____

2. A family of four drink 2.5l milk every day.
   What is the average amount in millilitres
   for each person?

_____ ml

3. Meena's salary is £795.63 a month.
   Round this amount to the nearest
   £10 and then find her approximate
   annual salary.

   £ _____

4. Mary was born in May 1883 and died in June
   1967. How old was she when she died?

_____

5.

The circumference of
the circle measures
31.4cm. Its radius
is 5cm. Find the
perimeter of the
semicircle.

_____ cm

6. A meal at a restaurant cost £40.00.
   A customer paid a tip of 8%.
   How much was the tip?   £ _____

7. Sweets cost 6p for 10. How many
   sweets can be bought for £1.14?

_____

8.

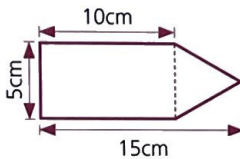| W	X	Y
78°	60°	40°
	71°	90°
51°		

Two of the
angles in each
of the triangles
W, X and Y
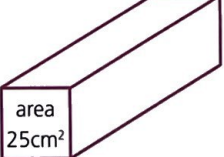are given.
Find the third
angle in each
triangle.

W _____ °

X _____ °

Y _____ °

9. The chart shows the distances travelled
   by a motorist in 3 hours. Find his average
   speed in kilometres per hour.

_____ km/h

09:00–10:00	10:00–11:00	11:00–12:00
85km	110km	75km

10. The scale of a map is 1:10 000.
    What distance in metres is
    represented on the map by

    a 1mm   b 3.5cm?

    a _____ m

    b _____ m

11.

The shape is
divided into a
rectangle and
a triangle. Find
the area of

10cm, 5cm, 15cm

    a the triangle

    a _____

    b the whole shape.

    b _____

12.

The volume
of the cuboid
is 175cm³.
Find its length.

area 25cm²

_____

SECTION 2 | Test 11

A
Answer

1. three 50ps and thirteen 10ps = £ ____   £ _____

2. $5l \div 4 =$ ____ ml   _____ ml

3. 4h 27min + 2h 35min =   ____ h ____ min

4. 6% of 500ml =   _____ ml

5. 3.75m – 2800mm = ____ mm   _____ mm

6. $1.12 \div 8 =$ _____

7. $14 - 5\frac{3}{8} =$ _____

8. $\frac{4}{9} \times \frac{3}{5} =$ _____

9. $10 - 2 \times 5 + 9 \div 3 =$ _____

10. Write as decimal fractions.
    a 23%   b $\frac{3}{15}$ a ____ b ____

11. 0.25 million + 6700 =   _____

12. £ ____ ÷ 7 = £2.67   £ _____

B
Answer

1. Subtract half of £4.36 from £5.   £ _____

2. Find in litres the total of 375ml, 0.325l and 0.25l.   _____ l

3. Find in millimetres $\frac{7}{10}$ of 8cm.   _____ mm

4. Multiply 50 by $1\frac{4}{5}$.   _____

5. What distance is travelled in 40min walking at an average speed of 6km/h?   _____ km

6. Write as a percentage.
    a 30p of £2   a _____ %
    b 30p of £4   b _____ %

7. 1m of felt costs £6. Find the cost of 90cm.   £ _____

8. How many thousandths have the same value as 16 hundredths?   _____ thousandths

9. Write 5cm of 10m as a fraction in its simplest form.   _____

10. Find the difference between 100 times £0.36 and 1000 times £0.36.   £ _____

11. a Write as a decimal to the nearest tenth $9\frac{37}{100}$.   a _____
    b Write to the first decimal place 8.64.   b _____

12. ____ miles ≈ 32km   _____ miles

C

Schofield & Sims

Answer

1. Write as a fraction in its lowest terms.
    a 2p of 10p   b 5p of £1   a ____ b ____
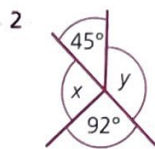
2. Calculate angle x and angle y. (45°, x, y, 92°)   ∠x ____ ∠y ____

3. Find the total mass of 50 packets each having a mass of 3.56kg.   _____ kg

4. Alice pays £9.00 per week for meals at work. The price of a meal is to be increased by 5%. How much will she pay then?   £ _____
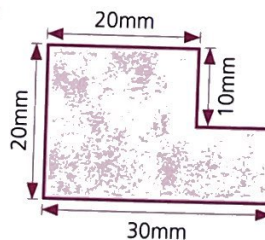
5. | 09998.7 | This is a reading of the number of kilometres travelled by a car. How many kilometres short of 10000km has the car travelled?   _____ km

6. Share £55 in the ratio of 2:3.   £ ____ £ ____

7. Which of the triangles X, Y or Z has
    a three lines of symmetry   a _____
    b one line of symmetry   b _____
    c no line of symmetry?   c _____

    X isosceles   Y scalene   Z equilateral
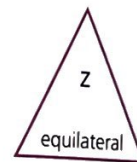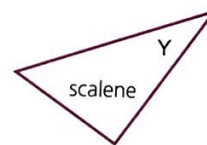
8. 10 bananas cost £1.40. Find the cost of 25.   £ _____

9. Find the area of this shape in mm². (20mm, 10mm, 20mm, 30mm)   _____ mm²

10. For which of the examples below is
    a 100 the best approximation   a _____
    b 10 the best approximation?   b _____

    | 0.9 × 10   10 × 0.99   1.9 × 10   10 × 0.09   10 × 9.9 |

11. Jack delivers newspapers on each of six days. The deliveries take 55min each day. He is paid 80p per hour. How much does he earn each week?   £ _____

12. Liz travelled to Blackpool in $2\frac{1}{2}$h at an average speed of 64km/h. How far did she travel?   _____ km

A

1 $2 \times 34 \times 5 =$

2 £3.73 + £1.17 + 90p = £ _____ £ _____

3 $\frac{3}{8} \times \frac{2}{3} =$ _____

4 855g + ___ g = 1.25kg _____ g

5 a 86p = ___ % of £1   a _____ %
   b 50p = ___ % of £5   b _____ %

6 $\frac{232}{8} = x$. Find the value of x. _____

7 3.5l – (750ml × 4) = ___ ml _____ ml

8 $20\overline{)}$ 7.5   Find the value of y. _____

9 $200 \times 0.018 =$ _____

10 100 miles ≈ ___ km _____ km

11 £10 – (£2.27 × 3) = _____ £ _____

12 $(6 \times 0.5) – (7 \times 0.25) =$ _____

B   **Answer**

1 Write 77 ÷ 8 as
   a an improper fraction   a _____
   b a mixed number.   b _____

2 A magazine is 1.8mm thick. What would be the height of a pile of
   a five magazines   a _____ mm
   b 15 magazines?   b _____ mm

3 How many days inclusive from 19 October to 6 November? _____

4 How many thousands in a quarter of a million? _____ Th

5 How many grapes costing 2p each can be bought for £5.90? _____

6 One can contains 1.25l and another 950ml. Find the average contents in litres. _____ l

7 Write as a decimal.
   a 850g of 1kg   a _____
   b 730g of 1kg   b _____

8 The height of a triangle is 20cm and the area is 160cm². Find the length of the base. _____ cm

9 Divide the total of £3.87 and £4.33 by 4. £ _____

10 Write as a decimal. a $\frac{9}{20}$ b $\frac{7}{25}$ a ___ b ___

11 Find the distance covered in 20min at an average speed of 15km/h. _____ km

12 8% of a sum of money is 24p. Find the whole amount. £ _____

C   **Answer**

1 Write each of the following to the nearest whole unit.
   a 8.502kg   a _____ kg
   b 6.92l   b _____ l

2 How many jars of jam costing 80p each can be bought for £4.80? _____

3 Which of these decimals is equal to
   a 25% b $2\frac{1}{2}$%?   a ___ b ___
   | 2.5 | 0.025 | 0.25 | 25.0 |

4 Write the value of each.
   a 24 + 6 ÷ 3 – 1   a _____
   b (24 + 6) ÷ (3 – 1)   b _____
   c (24 + 6) ÷ 3 – 1   c _____
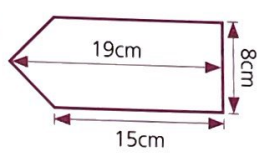
5 Find the area of the shape.
   19cm 8cm 15cm _____

6 Write in kilometres per hour a speed of 9km in 10min. _____ km/h

7 A discount of £8 was given when paying a bill of £64. Write the discount as
   a a simple fraction in its lowest terms   a _____
   b a percentage.   b _____ %

8 The mass of £1 worth of 1p coins is 356g. What is the mass of 25 of the coins? _____ g

9 The line AB has been drawn to the scale 1cm to 5km. Find the distance represented by the line. _____ km

   mm 10 20 30 40 50 60
   A   B
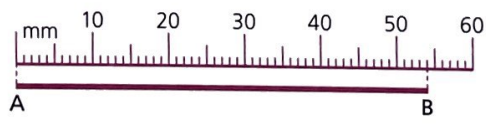
10 AB is a part of the circumference of a circle 2.8cm in diameter. Find in millimetres the length of the line OD. _____ mm
   B D O A centre

11 The population of a town in 1950 was 1.0 million. By the year 2000 there was a 10% increase. Write in millions the population in the year 2000. _____ million
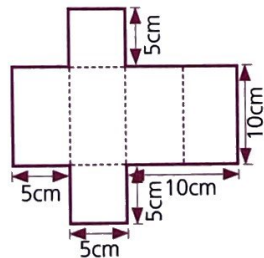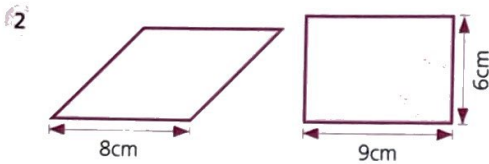
12 This is the net of a box. When the box is made, what will be
   5cm 10cm 5cm 10cm 5cm
   a the surface area   a _____
   b the volume?   b _____

29

PROGRESS TEST 2

Write the numbers 1 to 20 down the side of a piece of paper.
Write alongside these numbers the **answers only** to the following questions.
Work as quickly as you can. Time allowed – **10 minutes**.

1 $\frac{3720}{8} =$

2 By how many centimetres is the perimeter of the rhombus greater than the perimeter of the rectangle?

8cm   9cm   6cm

3 Add 145 000 to 1.7 million. Answer in digits.

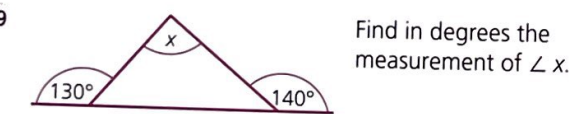**4** How many 125mm lengths can be cut from 2.5m?

5 $30 - 5 \times 4 + 7 =$

6 How many days inclusive from 20 April to 2 June?

7 Tariq travels from A to B in 1h. If he travels at the same average speed, how many minutes will it take him to travel from B to C?

A   B   C
120km   100km

8 Write the larger amount when £144 is divided in the ratio 3:5.

9 Find in degrees the measurement of $\angle x$.

x   130°   140°

10 In a sale, a table costing €625 was reduced by 20%. Find how much it was reduced by.

11 Isobel received £674.20 for four weeks' work. Find to the nearest £ the average weekly wage.

12 10 doughnuts cost £5.65. Find the cost of eight.

13 Three eggs in a box of 150 eggs were broken. What percentage of the eggs was broken?

14 The mass of a tin of chickpeas is 439g. Find to the nearest kilogram the total mass of 20 tins.

15 The figure ABCD is a parallelogram. The triangle AED is an equilateral triangle. By how many degrees is $\angle$ C greater than $\angle$ B?

A   B   D   E   C

16 A map is drawn to a scale of 1:250. What distance in metres does a line 100mm long represent?

17 7kg of sugar are used in 6 weeks. Write in kilograms correct to the first decimal place the average amount used each week.

18 Find the cost of 2kg 100g at 45p per $\frac{1}{2}$kg.

19 The marks scored in two tests were $\frac{40}{50}$ and $\frac{18}{20}$. Find as a percentage the average score.
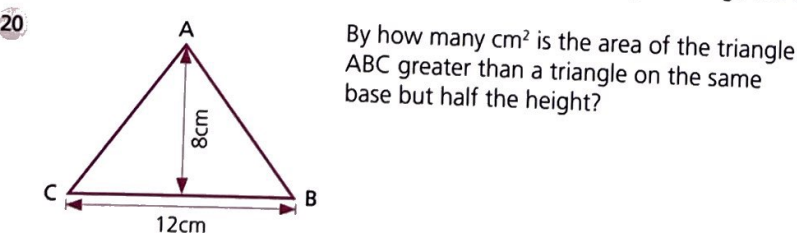
20 By how many cm² is the area of the triangle ABC greater than a triangle on the same base but half the height?

A   8cm   C   12cm   B

PROGRESS TEST 2 | Results Chart

You will work through Progress Test 2 at **four** different times – once at the end of Section 2, then again after you have completed each of Section 3 Test 4, Test 8 and Test 12.

When you first complete the test:

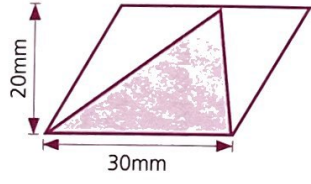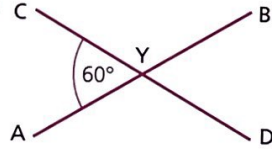a colour the first column to show the number of answers correct out of 20

b enter the date.

Each time you take the test, enter the result and the date in the marked columns.

	1st	2nd	3rd	4th
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
0				
date				

number of answers correct

A

		Answer
1	435g + 370g + 265g = ☐ kg	_____ kg
2	7% of 6m = ☐ cm	_____ cm
3	5.3 − 0.19 =	_____
4	4x = 28. Find the value of x.	_____
5	Write in digits 0.65 million.	_____
6	1.55 × 8 =	_____
7	1.3km − 750m = ☐ m	_____ m
8	£4.57 × 6 =	£ _____
9	376min = ☐ h ☐ min	_____ h _____ min
10	$10^3 − 10^2 =$	_____
11	Write as a decimal $5 + \frac{23}{1000}$.	_____
12	£3.60 ÷ 20 = ☐ p	_____ p

B

		Answer
1	Find in metres the total of 6m, 90cm, 7cm and 8mm.	_____ m
2	Increase £50 by 4%.	£ _____
3	What is the area of the largest triangle that can be cut from a square with sides measuring 8cm each?	_____ cm²
4	How many days inclusive from 2 July to 5 September?	_____ d
5	Find the change from £5 after spending 36p and £1.58.	£ _____
6	Write to the nearest 1p.	
	a £0.345	a _____ p
	b £1.014	b £ _____
7	Write these numbers, putting in a decimal point so that the value of the 3 in each is equal to 3 hundredths.	a _____
		b _____
	a 463 b 536 c 1003	c _____
8	Write $\frac{1}{3}$ as a decimal fraction correct to two decimal places.	_____
9	How many grams in 65% of 1kg?	_____ g
10	20 peppers cost £6.60. Find the cost of 8.	£ _____
11	Find the total in litres of (650ml × 4) and 0.4l.	_____ l
12	A car travels 15km in 10min. Find its speed in kilometres per hour.	_____ km/h

C

		Answer
1	Subtract £1.60 from the total of twelve 20ps, five 10ps and seven 5ps.	£ _____
2	When a number is divided by 8 the answer is $\frac{3}{4}$. What is the number?	_____
3	Which digit other than 1 is a factor of all these numbers? ☐ 15 12 18 51 21	_____
4	$6\overline{)\ x}$ 175 r 5 What number does x represent?	_____
5	Divide the fraction $\frac{2}{3}$ by 3.	_____
6	How many years are between MDCCXCV and MDCCC? Give your answer in digits.	_____
7	Find in mm² the area of	
	a the parallelogram	a _____ mm²
	b the shaded triangle.	b _____ mm²

20mm (height), 30mm (base)

8	Daniel has £20 to spend in seven days. How much is this per day to the nearest 10p?	£ _____
9	a Name the angle which is vertically opposite to ∠ CYA.	a ∠ _____
	b Write its measurement in degrees.	b _____ °
	c Write the measurement in degrees of ∠ CYB.	c _____ °
10	For how many hours and minutes is the office open each day?	_____ h _____ min

office opens	8:50 a.m.
closes for lunch	12:15 p.m. to 1:45 p.m.
office closes	5:15 p.m.

11	Dinner for eight people cost £120.00. How much will dinner cost for 10 people at the same rate?	£ _____
12	A 4cm line on a plan represents a distance of 10m.	
	a What does 1cm represent?	a _____
	b Write the scale as a fraction.	b _____

32

Mental Arithmetic 5

A

		Answer
1	$\frac{2}{3} \times 120 =$	
2	$(156 + 64) - \quad = 123$	
3	$3.014 \times 100 =$	
4	$\frac{£48}{5} = £$	£
5	6.5% of £8.00 = p	p
6	860m + 312m + 140m = km	km
7	Find the cost of 2.5m at £1.40 per metre. £	
8	$\frac{3}{5} \div 2 =$	
9	350kg × 6 = tonnes	t
10	2min 43s + 5min 38s =	min s
11	$x + 1.15 = 2.2$. Find the value of x.	
12	£2.50 × 36 =	£

B

		Answer
1	Find the difference between $96 - 24 \div 6$ and $(96 - 24) \div 6$.	
2	Write 3.454kg to the nearest 100g.	kg
3	The average of 8 numbers is 25. Find the sum of the numbers.	
4	What percentage is	
	a 15p of £3	a %
	b 40p of £2?	b %
5	How many times greater is 30.7 than 3.07?	
6	Write $\frac{25}{30}$ in its lowest terms.	
7	One doughnut costs 11p. Find the cost of	
	a 100	a £
	b 500.	b £
8	How many centimetres more than 2m is the perimeter of a regular hexagon with sides measuring 35cm each?	cm
9	1000 × 100 × 10. Write the answer in words.	
10	Which of these numbers are square numbers?	

7   35   1   64   121   50

| 11	How many pieces of tape each 12.5cm long can be cut from 2m of tape?	
12	A square has an area of 0.16m². Find	
	a the length of one side in metres	a m
	b the perimeter in centimetres.	b cm

C

		Answer
1	A full truck has a mass of 4180kg. The mass of the truck when empty is 3200kg. Find, in kilograms, the mass of the truck's load.	kg
2	Write the distance between X and Y	
	a in millimetres	a mm
	b in centimetres	b cm
	c in metres.	c m
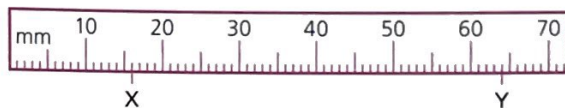
3	How many $\frac{1}{4}$l glasses can be filled from a $3\frac{1}{2}$l carton?	
4	An aeroplane travels at a speed of 1800km/h. How far will it travel in	
	a 1min	a km
	b 1s?	b m
5	A stack of 1p coins is 3cm high. Each coin is 1.5mm thick. What is the total value of the coins?	p
6	What volume of concrete in m³ is needed to cover the base to a depth of 10cm?	m³
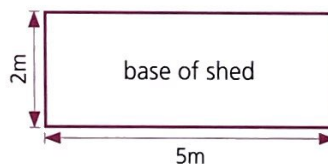
7	By how much is 5% of £250 greater than 4% of £250?	£
8	Emily's watch loses 2min each day. How many seconds is this per hour?	s
9	Find the cost per crayon to the nearest penny when buying	

Stationery
100 crayons £2.55
1000 crayons £20.20

	a 100 crayons	a p
	b 1000 crayons.	b p
10	Wooden planks 10cm wide are used to cover a floor 4m long and 3.5m wide. Find the total length of the strips.	m
11	A model aeroplane is made to a scale of 1:50. If the span of the wings of the model is 30cm, what is the actual length in metres of the span of the aircraft's wings?	m
12	By how many metres is the distance from A to C via B less than the distance from C to B via A?	m
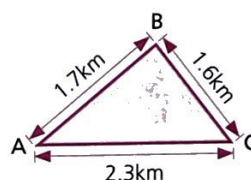
A

Answer

1 32 + 29 + 58 + 70 =

2 $9^2 - 1^2 =$

3 £1.67 × 9 =   £

4 $\frac{£6.88}{8} =$ p   p

5 (0.1 + 0.15) × 4 =

6 37 hours ÷ 5 = h   min   h   min

7 $\frac{2}{3} \div 5 =$

8 $\frac{5}{8}$ of 2400 =

9 2km × 0.25 = m   m

10 99% of 1kg = g   g

11 50mm × 20 = m   m

12 £5 − (£1.37 + £2.45) =   £

B

**Answer**

1 Write the number which is halfway
   between 1.5 and 2.0.

2 Reduce £30 by 6%.   £

3 Write $8\frac{5}{9}$ as an improper fraction.

4 What percentage of a sum of money
   remains after 12.5% has been spent?   %

5 How many tens are there in one
   hundred thousand?

6 Arrange these digits to make the largest
   possible even number.

   | 1 | 0 | 8 | 6 | 5 |

7 Approximate

   a £16.28 to the nearest 10p   a £

   b 14.75 to one decimal place.   b

8 Find in metres the perimeter of
   a regular pentagon with sides
   measuring 840mm each.   m

9 Write $\frac{2}{3}$ as a decimal correct to two
   decimal places.

10 How many pence have the same value
    as £1000?   p

11 a How many times can 20 be subtracted
       from 495 without going below 0? a

    b What is the remainder? b

12 The base of a triangle is 1m and its
    height is 50cm. Find its area in cm².   cm²
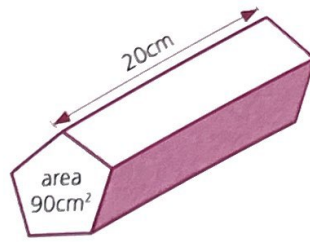
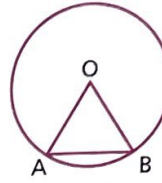1 Find in cm³
   the volume
   of the 3D
   shape.   cm³

   20cm, area 90cm²

2 How many fairy cakes costing 8p each
   can be bought for £30?

3 O is the centre of the
   circle. ∠ OAB is 56°.

   Find a ∠ OBA   a   °
         b ∠ AOB.   b   °

4 What is $\frac{1}{2}$% of a £2000   b £500?   a £   b £
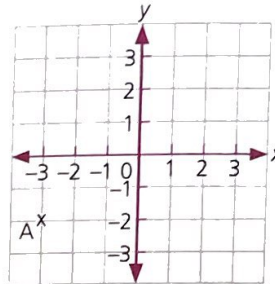
5 Point A is at
   (−3, −2).
   Write the
   coordinates
   of its
   reflection
   in the
   x-axis.   (,   )

6 Find to the nearest penny the cost of
   one kiwi when
   a 10 cost 73p   b 10 cost £1.15.   a   p
                                          b   p

7 A point at (−1, −1) is translated two squares
   to the left and one square up. What are
   its new coordinates?   (,   )

8 The circumference of a
   circle is 3.14 times the
   diameter. Find the
   length of the
   circumference
   of this circle.   cm

   5cm

9 The cooking time for a chicken is given
   as 20min per 500g plus a further 20min.

   a How long does it take to cook a
      2kg chicken?   a   h   min

   b The chicken must be cooked by 1:15 p.m.
      At what time must it go in the oven?   b

10 A 5l bottle of washing liquid cost £1.00.
    If 250ml are used each day, what is the
    cost per day?   p

11 A television costs £1500. How many
    months does it take to pay for it at £75
    per month?   mth
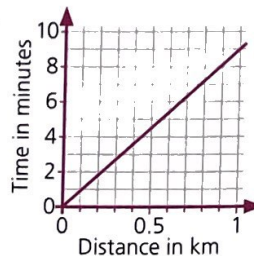
12 The graph shows
    the time taken by
    Hina to walk 1km.

    a How many
       minutes does
       it take to
       walk 1km?   a   min

    b Estimate to the nearest 100m
       the distance walked in 5min.   b   m

A

1. $(37p + 28p) - (13p + 42p) =$ _____ p

2. $7 \times £\square = £10.36$ £ _____

3. $3.5 - \square = 0.05$ _____

4. $2\frac{1}{8} + 1\frac{1}{4} + 1\frac{3}{8} =$ _____

5. $3\frac{1}{2}$ years = _____ months _____ mth

6. 10% of 1.5l = _____ ml _____ ml

7. $\frac{3}{5} \div 4 =$ _____

8. £24.00 ÷ 100 = _____ p _____ p

9. 800kg × $\square$ = 5.6t _____

10. 45cm − (55mm × 6) = _____ cm _____ cm

11. $\frac{847}{90} =$ _____ r _____ r

12. £1.25 × 24 = £ _____

B

Answer

1. Find the number which is 95% greater than 100. _____

2. How many sixths remain when $\frac{1}{3}$ is subtracted from $\frac{1}{2}$? _____

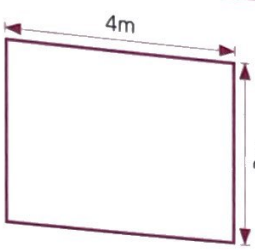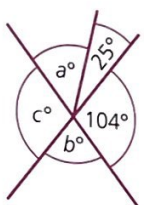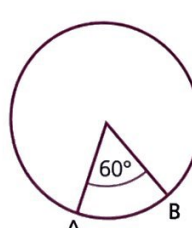3. 8.$\overset{x}{3}$7$\overset{y}{9}$ Write as a decimal the difference in value between the digit marked x and the digit marked y. _____

4. From the sum of £28.50 and £13.75 deduct £10.25. £ _____

5. | 0.6 × 4 = 2.4 |

   Now find

   a 0.6 × 0.4 a _____

   b 0.6 × 0.04. b _____

6. The area of a triangle is 36cm². Its height is 6cm. Find the length of the base. _____

7. Find the total length in metres of 144 strips each 0.25m long. _____ m

8. Six sandwiches cost £15. Find the cost of
   a two   b five. a £ _____
   b £ _____

9. Find the product of 18, 5 and 4. _____

10. Write 750ml of 3l as
    a a fraction in its simplest form a _____
    b a percentage. b _____ %

11. Multiply 1h 25min by 5. _____ h _____ min

12. Increase £1.76 by 10%. Give the answer to the nearest penny. £ _____

C

Answer

1. How many square tiles with sides measuring 20cm each are needed to cover the floor? _____

2. When it is noon in London it is 07:00 on the same day in New York. What is the time in New York when it is 14:40 in London? _____

3. Find in degrees the size of ∠ a ∠ b and ∠ c.
   ∠ a _____ °
   ∠ b _____ °
   ∠ c _____ °

4. A sum of money was divided between Riaz and Markus in the ratio of 3:2. Riaz received the larger share. Write the amount each received
   a as a fraction
   b as a percentage.
   a Riaz _____ Markus _____
   b Riaz _____ % Markus _____ %

5. Three 5ml spoonfuls of medicine are to be taken daily for two weeks. How many millilitres are required? _____ ml

6. 25 ice creams cost £2.40.
   a Find the cost of 100. a £ _____
   b Find to the nearest penny the cost of one. b _____ p

7. What is the highest common factor of 16, 32 and 56? _____

8. Multiply 15p by   a 5   a _____ p
   b 50   b £ _____
   c 500.   c £ _____

9. a What fraction of the circumference of the circle is the arc AB? a _____
   b If the circumference measures 56.4cm, find the length of the arc AB. b _____ cm

10. A map is drawn to a scale of 1mm to 1m. What length of line in millimetres represents a distance of 0.3km? _____ mm

11. Dad increased Mia's savings by 10% when he gave her £2.50. How much had she already saved? £ _____

12. By how much is it cheaper to buy a pack of four drinks at £1.64 than it is to buy four individual drinks costing 45p each? _____ p

SECTION 3 | Test 5

A

		Answer
1	£0.175 × 2 = ☐ p	_____ p
2	5% of £44 =	£_____
3	4.056kg + g = 4.75kg	_____ g
4	9×10^4 =	_____
5	£50.04 ÷ 3 =	£_____
6	($\frac{7}{8}$ of 56) + ($\frac{2}{3}$ of 30) =	_____
7	£0.34 × 50 = £	£_____
8	$\frac{17}{25}$ = $\frac{}{100}$ = ☐ %	$\frac{}{100}$ = _____ %
9	3m ÷ 6 = mm	_____ mm
10	250ml × 16 = ☐ l	_____ l
11	$\frac{7}{10}$ ÷ 3 =	_____
12	500 − (5 × 8 × 7) =	_____

B

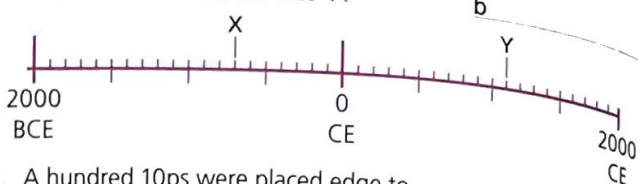|		Answer
1	By how many is 100 000 less than 1 million? Write the answer in digits.	_____
2	Find the product of 30 and $3\frac{2}{5}$.	_____
3	Find the difference between 1min 43.5s and 1min 47.4s.	_____ s
4	How many 0.3m lengths can be cut from 7.5m?	_____
5	By how many hundredths is $\frac{3}{4}$ more than 0.7?	_____ hundredths
6	Share $35 in the ratio 5:2.	$_____ $_____
7	The area of a parallelogram is 12.64m². The base is 8m long. Find the height in metres.	_____ m
8	Multiply £40 by 19.	£_____
9	What percentage of 4m is 50cm?	_____ %
10	Find the total contents in litres of eight bottles each containing 355ml.	_____ l
11	$\frac{3}{4}$ of a sum of money is £1.50. Find the whole amount.	£_____
12	Write in its simplest form the answer to $\frac{8}{10}$ divided by 4.	_____

C

		Answer
1	One litre costs £4.20. Find the cost of 1.75l.	£_____
2	a How many centuries does the timeline represent?	a _____
	b How many years are represented on the timeline from X to Y?	b _____

2000 BCE   0 CE   2000 CE

		Answer
3	A hundred 10ps were placed edge to edge in a straight line. The diameter of a 10p coin is 24.5mm. Find the length of the line in metres.	_____ m
4	Write 30cm of 1m as	
	a a fraction in its simplest form	a _____
	b a percentage.	b _____
5	The volume of a cube is 1000cm³. Find	
	a the length of one edge	a _____ cm
	b the total surface area in cm².	b _____ cm²
6	Follow this number chain. What number do you reach? Start at −10 → add 6 → subtract 4 → add 9 → subtract 5 → stop.	

7.

The shape is a regular hexagon.

a How many degrees are there in each angle at the centre?   a _____ °

b How many degrees are there in each angle at the centre of a regular octagon?   b _____ °

		Answer
8	Round each quantity to the nearest whole unit and then find the approximate answer.	
	a 9.018l × 24 =	a _____ l
	b 6.72m × 18 =	b _____ m
9	Walking at a speed of 6km/h, how long will it take to walk from	
	a Sten to Coty	a _____
	b Tinley to Coty?	b _____

Tinley   7.25km   1.75km   Sten   4.5km   Coty

		Answer
10	The area of a circle is 78.5cm². Find the area of the semicircle.	_____
11	What speed in kilometres per hour is the same as $26\frac{1}{2}$ km in 15min?	_____ km/h
12		

Ibrahim	11 years 6 months
Alfie	12 years 4 months
Leah	10 years 2 months

Find the average age of the children.   _____ yr _____ mth

A

1. $24 + 17 + 46 =$ _____

2. $725g \times 8 =$ ___ kg _____ kg

3. $77p \times 7 = £$ £ _____

4. $\frac{9}{12} \div 3 =$ _____

5. 5% of 1.2kg = ___ g _____ g

6. 0.054m = ___ cm _____ cm

7. £10.00 – (£3.79 + £2.81) = £ _____

8. 75ml × 1000 = ___ l _____ l

9. $8 \times £y = £10.16$. Find the value in £s of y. £ _____

10. $0.01 \times 0.1 =$ _____

11. $9 \overline{)\ 2\ .\ 8\ \ 8\ }$ _____

12. 4 tonnes cost £10. Find the cost of 3t. £ _____

B   **Answer**

1. Write as a percentage 8.5p from £1. _____ %

2. What do you multiply 0.5 by to give 6.0? _____

3. Add sixty thousand to a quarter of a million. _____

4. Which of the following are prime numbers?

   | 17 27 37 47 57 | _____

5. Which of the following numbers are composite (not prime) numbers?

   | 51 52 53 54 | _____

6. Diagonals are drawn in a square with sides of 6cm to create four triangles. Find the area of one of these triangles. _____ cm²

7. Express as a ratio

   a 60p to £1.80   a _____

   b 1mm to 4.5m.   b _____

8. One jam tart costs 12p. Find the cost of 200. £ _____

9. How many 750ml bottles can be filled from 3l? _____

10. Write 875g of 1kg as

    a a decimal fraction   a _____

    b a fraction in its simplest form.   b _____

11. Express 50 ÷ 9

    a as a mixed number   a _____

    b as a decimal correct to two places.   b _____

12. How much greater is the total of £2.45 and £3.55 than £18 divided by 4? £ _____

C   **Answer**

1. Which of the measurements is nearest to $\frac{1}{2}$m?

   | 475mm   43cm   0.575m   0.6m | _____

2. Henry missed the 08:44 train by 7min. How long did he have to wait for the next train at 10:17? _____ h _____ min

3. By how many metres is 820m less than 1.25km? _____ m
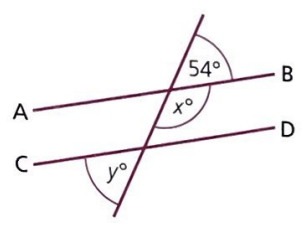
4. The lines AB and CD are parallel. Find in degrees $\angle x$ and $\angle y$. $\angle x$ _____ °

     $\angle y$ _____ °

5. The estimated population of Mexico City is 18850000. Write the population

   a in millions as a decimal   a _____ million

   b to the nearest 100000.   b _____

6. $56 \times 27 = 1512$. Find   a 28×27 a _____

     b $27 \overline{)\ 15.12}$ b _____

7. π is approximately $3\frac{1}{7}$. Write $3\frac{1}{7}$ as

   a an improper fraction   a _____

   b a decimal correct to two places.   b _____

8. By how much is the product of $\frac{2}{3}$ and 6 less than the sum of $\frac{2}{3}$ and 6? _____

9. One adult ticket and three half-price tickets cost £10. Find the cost of one adult ticket. £ _____

10. The perimeter of the rhombus is 80mm. What is the area in mm² of the shaded triangle? _____ mm²

     10mm
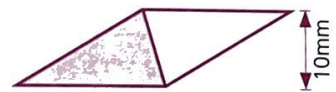
11. The scale of a plan is 1:250. What is the actual length in metres represented by a line on the plan which measures 40mm? _____ m

12. These are the results of a cycling test. Write each school's number of passes as a percentage of the number of children.

    Barsby _____ %

    Clinton _____ %

    St. Peter's _____ %

school	Barsby	Clinton	St. Peter's
number of children	100	200	300
number of passes	92	165	270

SECTION 3 | Test 7

A

Answer

1   $(8 \times 7 \times 0) + (8 + 7 + 0) =$

2   $\boxed{} \times \frac{1}{2} = 6$

3   Find the cost of 125g at £1.24 per $\frac{1}{2}$ kg.   _____ p

4   £7.04 ÷ 8 =   p   _____ p

5   0.7 million + 0.5 million. Answer in digits.   _____

6   £4.05 × 10 =   £_____

7   3650mm + _ mm = 5m   _____ mm

8   30% of £5 =   £_____

9   $\frac{£2.40}{6}$ + 60p = £_   £_____

10   (480m + 530m) × 2 = _ km   _____ km

11   $\frac{14}{16}$ ÷ 5 =   _____

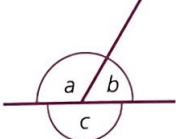12   (600ml × 5) ÷ 2 = _ l   _____ l

B

Answer

1   How much less than 50 is $\frac{2}{7}$ of 28?   _____

2   Add twenty to thirty-nine thousand nine
    hundred and eighty. Answer in digits.   _____

3   Find the whole amount when
    20% is 50p.   £_____

4   $(6 \times 10^4) + 1 =$ _____

5   1000 pencils cost £95. Find the cost of

    a 10   a_____ p

    b 40.   b £_____

6   Find the difference in millilitres between
    0.75 of 800ml and 0.7 of 1l.   _____ ml

7   Write as a decimal. a $\frac{1}{50}$ a_____

                          b $\frac{1}{25}$ b_____

8   A length of 3.75m is cut into
    six equal parts. Find the length in
    millimetres of each part.   _____ mm

9   Express as a ratio

    a 800ml to 4l   a_____

    b 600g to 6kg.   b_____

10   Write $\frac{1}{6}$ correct to two decimal places.   _____

11   Subtract the sum of 780mm and 52cm
     from 2m.   _____ mm

12   The area of a rectangle is 450cm².
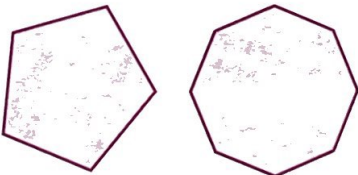   The length is 30cm. Find the width
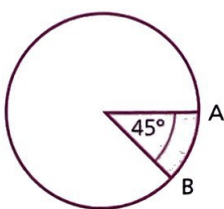   in centimetres.   _____ cm

C

Answer

1   A hundred 2ps weigh 0.712kg. Find the
    mass in grams of £1 worth of 2ps.

2   These are the number of sweets found by
    four children in a treasure hunt. What is
    the mean number of sweets found?

    | 20 | 17 | 0 | 11 |

3   $x = 3.5 - 0.5 \times 7$ $y = (3.5 - 0.5) \times 7$

    Find the value of   a x a_____

                         b y b_____

                         c $y - x$.   c_____

4   Noah and Poppy shared their money in
    the ratio of 4:3. Noah's share was £12,
    which was the larger amount.
    How much was Poppy's share?   £_____

5   A bottle of water holds 450ml. Find in
    litres the contents of 50 bottles.   _____ l

6   ∠ a is twice the size
    of ∠ b. ∠ c is
    three times
    the size of ∠ b.
    Find in degrees
    ∠ a, ∠ b and ∠ c.
    ∠ a _____ °
    ∠ b _____ °
    ∠ c _____ °

7   Toby was born on 1 Oct. 04. How
    old will he be in years and months
    on 1 Feb. 2020?   _____ yr _____ mth

8   Find the cost to the nearest penny of one
    balloon when 50 balloons cost £3.80.   _____ p

9   How many lines of symmetry has

    a a regular pentagon   a_____

    b a regular octagon?   b_____

10   3m of silk is divided into nine equal pieces.
     Write to the nearest centimetre the length
     of one piece.   _____ cm

11
     £2.75
     £1.63
     £4.25
     Find the change from
     a £10 note after
     paying this bill.   £_____

12
     a What fraction of
         the area of the
         circle is the
         shaded sector?   a_____

     b If the circumference of the circle
         measures 471mm, find to the
         nearest millimetre the length
         of the arc AB.   b_____ mm

A

		Answer
1	2 tonnes – 850kg = $\quad$ t	_____ t
2	Round 4 546 000 to the nearest hundred thousand.	_____
3	$\frac{1}{2} +$ $\quad$ $= \frac{11}{12}$	_____
4	68p + 27p + £1.16 = £	£ _____
5	275mm × 6 = $\quad$ m	_____ m
6	44p × 9 = £	£ _____
7	1kg costs 70p. Find the cost of 600g.	_____ p
8	12 × 5 × 20 =	_____
9	$33\frac{1}{3}$% of £51 =	£ _____
10	£13.00 – £ $\quad$ = £8.36	£ _____
11	5.0 × 0.5 =	_____
12	$\frac{£4.02}{7} =$ $\quad$ p r $\quad$ p	_____ p r _____ p

B

		Answer
1	How many hundredths more than $\frac{1}{4}$ is 0.31?	_____ hundredths
2	How many litres and millilitres in $\frac{3}{8}$ of 10l?	_____ l _____ ml
3	3 × 3 = 3^2 = 9 $\quad$ √9 = 3 Find √25.	_____
4	40 waffles cost £22. Find the cost of eight waffles.	£ _____
5	Find the sum of the prime numbers between 60 and 70.	_____
6	How much is 150% of £3.50?	£ _____
7	How many times is 125ml contained in a 0.5l $\quad$ b 2.75l?	a _____ b _____
8	$\begin{array}{r} 4\ 5\ 8\ 3 \\ -\ 2\ 6\ 9\ 4 \\ \hline 1\ 8\ 8\ 9 \end{array}$ Use the example to find a 2694 + 1889 b 4583 – 1889.	a _____ b _____
9	The perimeter of a rectangle is 54cm. The breadth is half the length. Find a the length $\quad$ b the breadth.	a _____ cm b _____ cm
10	What number when multiplied by 6 has a product of 39.6?	_____
11	Write the coordinates of the point (3, 5) when reflected in the y-axis.	(_____ , _____)
12	How many centimetres less than 8m is the total of twenty 36cm lengths?	_____ cm

C

		Answer
1	$\begin{array}{|c|} \hline 23:57 \\ \hline 23:58 \\ \hline 23:59 \\ \hline a \\ \hline b \\ \hline \end{array}$ These are five consecutive readings at one minute intervals on a 24-hour digital clock. Write the next two readings on the clock.	a _____ b _____
2	The mass of three-quarters of a cake is $4\frac{1}{2}$ kg. What is the mass of half of the cake?	_____ kg
3	A room is 5m long and 4m wide. It has a volume of 60m³. How high is the room?	_____
4	$\frac{1}{4}$ million people visited an art gallery in one week. This number increased by 1% the following week. What was the increased number of visitors?	_____
5	After saving a regular amount each month for one year Sita had a total of £18. How much had she saved after a 3 months $\quad$ b 10 months?	a £ _____ b £ _____
6	Syed was absent from school 20 times out of a possible attendance of 400. Write as a percentage the number of times he was a absent $\quad$ b present.	a _____ % b _____ %
7	$\begin{array}{\|c\|c\|} \hline \text{Broughton} & \text{Carnley} \\ \text{depart} & \text{arrive} \\ 15:48 & 16:28 \\ \hline \end{array}$ The distance from Broughton to Carnley is 90km. Find the average speed of the train in kilometres per hour.	_____ km/h
8	The attendances at four music festivals were 29 758, 25 495, 24 086 and 19 810. Round each number to the nearest thousand and find the approximate total attendance.	_____
9	Five melons of equal value cost £5.40. Find the value of three of the melons.	£ _____
10	What is the distance from Ash to Rost a in metres $\quad$ b in kilometres?	a _____ m b _____ km
	Conty $\xleftrightarrow{2.85km}$ Ash $\qquad$ Rost $\xleftrightarrow{\qquad 5250m \qquad}$	
11	Find the circumference of the circle to the nearest centimetre. (C = 2πr; π = 3.14). (circle radius 10mm)	_____ cm
12	1cm on a map represents an actual distance of 600m. What is the scale of the map?	_____

A | Answer

1 2300 + 970 + 1700 = _____

2 $\frac{7}{8} \div 7 =$ _____

3 70% of 360° = _____ °

4 (15 × 8) ÷ 6 = _____
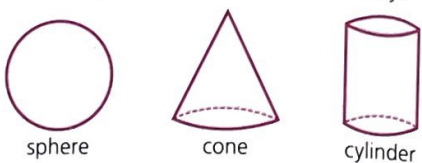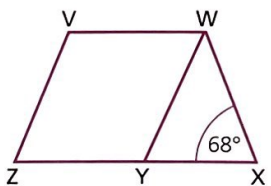
5 379m + 221m = _____ km _____ km

6 $\frac{£2.50 \times 12}{6} = £$ _____ £ _____

7 a $\frac{1}{2}l + x$ml = 615ml. Find x. a _____ ml

b $\frac{1}{2}l - 368$ml = $y$ml. Find y. b _____ ml

8 a 0.3 × 0.2 = a _____

b 0.06 ÷ 0.2 = b _____

9 $\frac{1}{4} + \frac{5}{16} =$ _____

10 2.475m ÷ 9 = _____ mm _____ mm

11 Subtract 17 from 9. _____
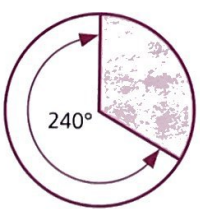
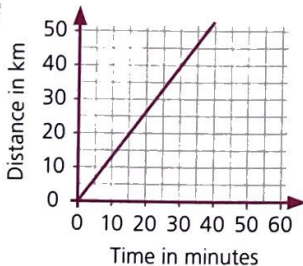**12** 24.8 × 1.6 = _____

248 × 16 = 3968

B | Answer

1 How many quarters are there in 36? _____

2 Write as a fraction in its simplest form.

a $\frac{4}{1000}$ b $\frac{45}{1000}$ c $\frac{28}{1000}$ a _____ b _____ c _____

3 1kg costs £4.00. Find the cost of 700g. £ _____

4 Find the product of 20 and 0.005. _____

5 How many centimetres remain when 268cm are taken from 3.4m? _____ cm

6 Write to the nearest second decimal place.

a 53.176 a _____

b 24.694 b _____

7 Find the mean of 1.1, 2.3 and 0.8. _____

8 Share 3kg in the ratio 1:4. _____ kg _____ kg

9 Which year is MDCXXXII? _____

10 Find the area in cm² of a square of side 11cm. _____ cm²

11 Which two numbers have a sum of 20 and a product of 36? _____

12 Deduct (£1.15 × 3) from (£18 ÷ 5). _____ p

C | Answer

1 The approximate population of a city is 1.2 million. The actual population is 1 207 806. Find the difference.

2 Two parcels together have a mass of 18.5kg. One of them is 4kg heavier than the other. Find the mass of each parcel. _____ kg _____ kg

3 Which of these shapes will have a circular face when cut horizontally, and a rectangular face when cut vertically?

sphere   cone   cylinder

4 In a class of 30 children 12 were absent. Write the number absent as

a a fraction in its simplest form a _____

b a ratio of absent to total. b _____

5 A bagel costs 35p. How many can be bought for £7.00? _____

6 VWYZ is a rhombus. WXY is an isosceles triangle. Find

68°

a ∠ WYZ a _____ °

b ∠ VWY b _____ °

c ∠ ZVW. c _____ °

7 Tom has 95p and Sophie has 73p. How much must Tom give to Sophie so that each has the same amount? _____ p

8 If 1 July falls on a Thursday how many Saturdays will there be in that month? _____

9 One child in every four in a school of 200 walks to school.

a What percentage do not walk to school? a _____ %

b How many walk to school? b _____

10 Write the coordinates of the point (3, 5) when reflected in the x-axis. (_____ , _____)

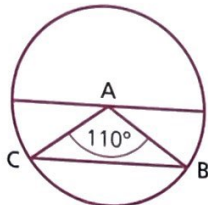**11** 240° The area of the circle is 321cm². Find the area of the shaded sector. _____

12 The graph shows the speed of a car. Use the graph to find the time taken by the car to travel 40km. _____ min

Distance in km — Time in minutes

A

1. £1.20 × $3\frac{1}{2}$ =   £ _____

2. $\frac{2.64 + 3.36}{2}$ =

3. 2.25l – (250ml × 6) =   ml   _____ ml

4. $\frac{20}{24}$ ÷ 25 =

5. 1200km – (320km + 280km + 335km) =   _____ km

6. a $\frac{1}{8}$ =   %   a _____ %

   b $\frac{3}{8}$ =   %   b _____ %

7. 9.8 ÷ 4 =

8. £5.00 – £   = £2.82   £ _____

9. £6 × $\frac{2}{5}$ =   £ _____

10. 9x = 33 + 48. Find the value of x.   _____

11. Find the cost of 30cm at £1.80 per metre.   _____ p

12. $\frac{1}{7}$ of 4kg 60g =   g   _____ g

B   Answer

1. Add $\frac{3}{4}$ of 28 to $\frac{7}{8}$ of 56.   _____

2. (4 × 10³) + (2 × 10²) =   _____

3. Increase £3.00 by 7%.   £ _____

4. Write $\frac{3}{8}$ as a decimal fraction.   _____

5. Find the total mass in kilograms of these amounts of water.   _____ kg

   | 2.7l   95ml   3.4l |

6. One pear costs 17p. Find the cost of   a £ _____
   a 10   b 1000.   b £ _____

7. A rhombus has an area of 20cm². Its base is 5cm. Find its height in millimetres.   _____ mm

8. Approximate 4 635 000 to
   a the nearest 1 000 000   a _____
   b the nearest 100 000.   b _____

9. Write the year 1916 using Roman numerals.   _____

10. Find the difference in hundredths between 100 × 0.016 and 100 × 0.017.   _____ hundredths

11. Express 43 ÷ 5 as
   a a mixed number   a _____
   b a decimal.   b _____
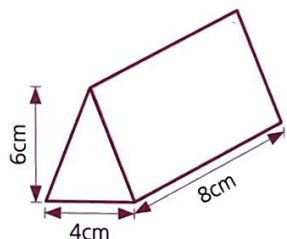
12. Multiply £1.50 by 52.   £ _____
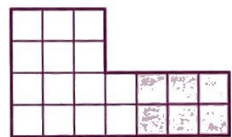
C   Answer

1. A cask holds 20.75l of water. The mass of the cask when empty is 850g. Find the mass of the cask when it is full.   _____ kg

2.
   A is the centre of the circle.
   a Name the triangle ABC by its sides.   a _____
   b Calculate the angle at B.   b _____ °

3. Six pairs of socks cost £8.37. Find to the nearest penny the cost of one pair of socks.   £ _____

4. There are 4.545l of shampoo in a plastic container. The shampoo lasts for nine weeks. How many millilitres are used on average per week?   _____ ml

5.
   820ml   820ml   820ml
   There was 87p change from £3 after buying the multipack. Find the cost of each bottle.   _____ p

6. Find in litres the volume of
   a one multipack   a _____ l
   b eight multipacks.   b _____ l

7. A map is drawn to a scale of 1cm to 1km. How many metres are represented on a map by a line 14mm long?   _____ m

8.
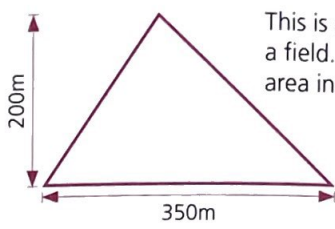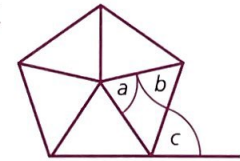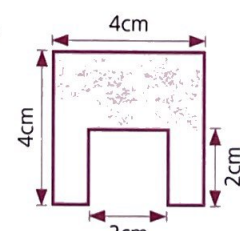   6cm   8cm   4cm
   Find
   a the area of the triangular end of the prism   a _____
   b the volume of the prism.   b _____

9. A car averaged 8km to a litre of petrol on a four-hour journey of 312km.
   a How many litres were used on the journey?   a _____ l
   b What was the average speed?   b _____ km/h

10. The price of a pair of shoes costing £25 increased by £1.25. Write the increase as a percentage.   _____ %

11.
   Write the proportion of shaded squares
   a as a fraction in its simplest form   a _____
   b as a decimal.   b _____

12. Matthew arrived at a hotel on 29 October and left on 3 November. The charge for the room was £10.50 per night. What was the total cost of the room?   £ _____

SECTION 3 | Test 11

A
		Answer
1	2.999 + 0.1 =	
2	$\frac{40}{45} \div 8 =$	
3	6.25% of £4.00 = p	_____ p
4	£3.24 = × 2p	
5	86.6 × 200 =	
6	5.2l – 480ml = l	_____ l
7	5x = 28.2. Find the value of x.	
8	11 730 ÷ 25 = 469 r	469 r _____
9	£2.78 + £2.78 + £2.78 + £2.78 + £2.78 =	£ _____
10	4kg × $\frac{3}{\,}$ = 1500g	
11	40cm cost 50p. Find the cost per metre.	£ _____
12	Subtract 6 from –3.	

B
		Answer
1	a £1.32 × 4 =	a £ _____
	b £1.32 × 16 =	b £ _____
2	What must be added to $2\frac{5}{8}$ to make $4\frac{1}{2}$?	
3	Find 8.5% of £10.	_____ p
4	The perimeter of a rectangle is 30m. The width is 6.5m. Find its length.	_____ m
5	Divide £162 in the ratio 5:4.	£ _____ £ _____
6	1000 bags of crisps cost £154.00. Find the cost of one bag of crisps to the nearest penny.	_____ p
7	How much less than 20 is the product of 1.7 and 9?	
8	How many thousandths in $\frac{1}{4}$ of 0.02?	_____ thousandths
9	Find the difference in millimetres between 0.7m and 369mm.	_____ mm
10	Write 150ml of 750ml as a a fraction in its simplest form	a _____
	b a percentage.	b _____ %
11	Round these amounts to the nearest £1 and then find the approximate answer. £16.70 + £12.95 + £9.28	£ _____
12	If 5 miles is about 8km, about how many kilometres is 17.5 miles?	_____ km

C
		Answer
1	3.468 × 6 Write the answer	
	a to three decimal places	a _____
	b to two decimal places	b _____
	c to one decimal place.	c _____
2	The contents of four boxes of sweets were 51, 46, 49 and 54. Find the mean contents.	

3

This is a plan of a field. Write its area in m². _____ m²

		Answer
4	A crate of 240 eggs was delivered to a school kitchen. 12 of the eggs were broken. What percentage were a broken b not broken?	a _____ % b _____ %
5	F = {1, 2, 3, 6, , , , 78} F = the set of factors of 78. Find the missing factors.	
6	Find each missing mass.	x _____ g y _____ kg z _____ kg

mass of onions	450g	1.75kg	zkg
mass of box	xg	750g	150kg
total mass	635g	ykg	1.1t

		Answer
7	A camera costs £85.50. It can be paid for in nine equal instalments. Find the cost of each payment.	£ _____

8

This is a regular pentagon. Find in degrees the measurement of ∠ a, ∠ b, ∠ c.

∠ a _____ °
∠ b _____ °
∠ c _____ °

9   1g = 1000mg   A selection pack contains 120 chocolates. Each chocolate has a mass of 500mg.

a Write the mass of each chocolate in grams. a _____ g

b Find in grams the total mass of the chocolates. b _____ g

10

For the shaded shape find

a the area a _____

b the perimeter. b _____

11 A wall 3m high and 4m wide is to be covered in wallpaper 50cm wide. What length in metres of the paper is required? _____ m

12 Find the cost per kilogram of 1.5kg of ice cream costing £3.18. £ _____ per kg

A

Answer

1. (268 + 232) − 350 = _____

2. 2 640 000 = _____ million _____ million

3. 50p − (17p + 16p + 9p) = _____ p

4. 3.5m − 175cm = _____ cm _____ cm

5. $\frac{x}{21} = \frac{2}{3}$. Find the value of x. _____

6. Find the cost of 750ml at £4.80 per litre. £ _____

7. $\overset{16\ \ r\,4}{8\,)\,\overline{\ y\ }}$ Find the value of y. _____

8. 4 × 18 × 50 = _____

9. $\frac{6}{8} \div 12 =$ _____

10. (12% of £5) + (8% of £5) = £ _____

11. $7\frac{1}{4}l \div \square = 725ml$ _____

12. $0.14 × 15 = $ _____

B

Answer

1. Find in centimetres the perimeter of an equilateral triangle with sides measuring 96mm each. _____ cm

2. Write the 24-hour clock time which is 1h 24min after 22:57. _____

3. How many times is 800g contained in 3.2kg? _____

4. Divide £85 by 6
   a to the nearest 10p   a £ _____
   b to the nearest penny.   b £ _____

5. The total of two amounts is £12 and their difference is £3.60. Find the two amounts. £ _____ £ _____

6. Find the difference in thousands between (1 × 10⁵) and (9 × 10⁴). _____

7. Write $3\frac{1}{2}$% as a decimal. _____

8. Multiply £2.54 by 1.5. £ _____

9. Write the year 1349 using Roman numerals. _____

10. Increase £15 by 4%. £ _____

11. Write the scale 1cm to 2km as a fraction. _____

12. The diameter of a circle is 6cm. Its circumference is 3.14 times greater. What is the perimeter of the semicircle? _____ cm

C

Answer

1. Find the cost per kilogram of
   a shampoo costing £1.09 for 500g   a £ _____
   b conditioner costing £1.26 for 600g. b £ _____

2. A 50p coin has a mass of 13.5g. What is the mass of £10 worth of 50ps? _____ g

3. Write the length of a line 100 times the length of the line AB
   a in millimetres   a _____ mm
   b in centimetres   b _____ cm
   c in metres.   c _____ m
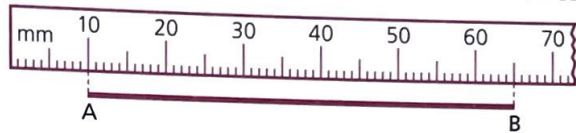
4. On a plan of a house the living room measures 44mm long and 40mm wide. The scale of the plan is 1cm to 1m. Find in m² the area of the living room. _____ m²

5. Which of the dotted lines are lines of symmetry? _____
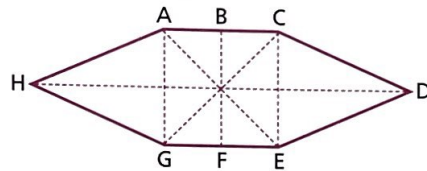
6. Ellie ran 800m in 1min 52s. What was her average time per 100m? _____ s

7. On a five-day holiday George walked 14.75km, 13.76km, 12.29km, 10.15km and 9.32km. Round each distance to the nearest kilometre and find the approximate mean distance walked daily. _____ km

8. The circumference of the circle is 420mm. Find the length of the arcs of
   a sector Y   a _____ mm
   b sector Z.   b _____ mm

9. Lemonade can be made of water and lemon juice in the ratio 4:1. How many litres of water are mixed with half a 50l cask of lemon juice? _____ l

10. Find the mean daily temperature. _____ °C

Mon	Tues	Wed	Thurs	Fri
5°C	3°C	0°C	−1°C	−2°C

11. The point (3, 5) is translated two squares to the left and four squares down. The new point is then reflected in the y-axis. What are the coordinates of the reflected point? (_____ , _____)

12. These are the results of three tests. Write each as a percentage.
   a $\frac{18}{25}$ b $\frac{30}{40}$ c $\frac{10}{30}$

   a _____ %
   b _____ %
   c _____ %

CHECK-UP TEST | Number

A

12 – 7 =	53 ÷ 7 = ____ r ____
9 + 4 =	(6 × 8) + 5 = ____
3 × 6 =	70 ÷ 8 = ____ r ____
63 ÷ 9 =	(4 × 9) + 7 = ____
6 + 9 =	52 ÷ 6 = ____ r ____
7 × 8 =	(7 × 0) + 3 = ____
11 – 7 =	4 ÷ 9 = ____ r ____
24 ÷ 3 =	(8 × 1) + 6 = ____
5 + 8 =	61 ÷ 7 = ____ r ____
0 ÷ 7 =	(9 × 4) + 5 = ____
8 × 6 =	77 × 10 = ____
64 ÷ 8 =	135 ÷ 10 = ____ r ____
9 × 3 =	35 × 20 = ____
13 – 7 =	204 ÷ 20 = ____ r ____
7 + 8 =	96 × 30 = ____
15 – 9 =	156 ÷ 40 = ____ r ____
0 × 8 =	108 × 60 = ____
4 + 6 =	302 ÷ 60 = ____ r ____
40 ÷ 8 =	88 × 70 = ____
16 – 7 =	463 ÷ 90 = ____ r ____

B Write these numbers in digits.

forty thousand and nine

eighty-one thousand two hundred and five

two hundred and ten thousand four hundred

five hundred and six thousand and seventy

700 000 + 1000 + 90 + 5

(4 × 10 000) + (8 × 100) + 9

1 million

$1\frac{3}{4}$ million

2.6 million

$(6 \times 10^3) + (3 \times 10^2) + (0 \times 10)$

$(9 \times 10^4) + (7 \times 10^3) + (1 \times 10^2) + (3 \times 10)$

Write the answers to these as decimals.

206 tenths

1509 thousandths

eighteen hundredths

$17 + \frac{5}{10} + \frac{3}{1000}$

$10 + \frac{6}{100} + \frac{7}{1000}$

$\frac{27}{100} + \frac{8}{1000}$

$60 + \frac{57}{1000}$

C Write in digits the number which is

forty less than ten thousand ____

zero point six two more than ten ____

five hundred less than fifty-five thousand ____

two point seven less than two hundred. ____

Write in words the value of the digit underlined.

3<u>7</u>908 ____

1<u>6</u>04 326 ____

9.0<u>8</u>4 ____

20.50<u>2</u> ____

7.9 = ____ tenths	20.6 = ____ tenths
0.75 = ____ hundredths	3.09 = ____ hundredths
0.018 = ____ thousandths	10.06 = ____ thousandths
5.9 = ____ thousandths	0.003 = ____ thousandths

Write these numbers, omitting the zeros which do not alter the value of the number.

17.09 ____	8.070 ____
020.60 ____	30.020 ____
002730 ____	106.00 ____

D

3.46 + 5.04 = ____	30.08 × 10 = ____
5.16 + 3.8 = ____	2.017 × 100 = ____
1.99 + 2.01 = ____	0.063 × 1000 = ____
0.76 + 0.493 = ____	3 × 7.8 = ____
2.83 + 7.178 = ____	0.09 × 6 = ____
3.92 – 1.9 = ____	6.075 × 8 = ____
6.1 – 0.7 = ____	10.3 ÷ 10 = ____
10.0 – 9.348 = ____	3.7 ÷ 100 = ____
7.2 – 0.09 = ____	46 ÷ 1000 = ____
8.63 – 3.58 = ____	18.36 ÷ 6 = ____
5.825 – 0.06 = ____	2.43 ÷ 9 = ____

Find the value of x.

14.091 ÷ 7 = ____

x + 19 = 54 ____	Find the value of x.
3.2 + x = 10 ____	10 × x = 3.65 ____
52 – x = 18 ____	x × x = 36 ____
x – 4.05 = 3.6 ____	7x = 108.5 ____
2.3 + x = 20 ____	$\frac{x}{5}$ = 12.8 ____
x = 17.2 – 5.5 ____	$\frac{72}{x}$ = 9 ____

E Approximate to the nearest:

hundred thousand	1.37 million	____ million
thousand	79 464	____
hundred	23 086	____
whole number	a 16$\frac{1}{3}$ ____	b 29.52 ____
first decimal place	10.38	____
	5.94	____
second decimal place.	0.025	____
	13.004	____

F Work out these divisions

a to 2 decimal places then

b approximate the answer to the nearest first decimal place.

39 ÷ 8 =	a ____	b ____
5.5 ÷ 3 =	a ____	b ____
14.6 ÷ 7 =	a ____	b ____

Work out these divisions

a to 3 decimal places then

b write the answer correct to 2 decimal places.

58 ÷ 6 =	a ____	b ____
34.26 ÷ 9 =	a ____	b ____

CHECK-UP TEST | Measurement

A Find the total of each row of coins.

50p	20p	10p	5p	2p	1p	Total
	2	3	4	6		
2	5	9			13	
	7		5	8		
		17	8		12	
1	3	6		10		
5	4	7	12			
11					23	

B Find a the total cost of the items bought and b the change

money given	cost of items bought	total cost	change
50p	9p, 8p, 18p	p	p
four 10ps	5 at 7p each	p	p
£1	23p, 18p, 40p	p	p
£1 and 50p	3 at 38p each	£	p
£2	10 at 18p each	£	p
£5 note	£2.75, £1.28	£	p

C

£0.39 = ▓ 5ps + seven 2ps _____
£0.85 = 50p + ▓ 5ps _____
£1.70 = two 10ps + ▓ 50ps _____
£2.80 = eight 5ps + ▓ 20ps _____
£4.25 = seven 50ps + ▓ 5ps _____

How many items each costing
2p for 98p _____
3p for £1.74 _____
5p for £2.05 _____
50p for £18.50 _____
20p for £25.20 _____
5 for 6p for £1.62 _____
7 for 10p for £3.30? _____

10 items cost £1.20
1 costs _____ p   7 cost _____ p
100 items cost £2.30
10 cost _____ p   30 cost _____ p
20 items cost £3.60
5 cost _____ p   1 costs _____ p
8 items cost £1.44
3 cost _____ p   7 cost £ _____
5 items cost 85p
1 costs _____ p   9 cost £ _____
40 cost £ _____   100 cost £ _____

39p + 57p + 41p = £ _____
£1.06 + £3.70 + £0.28 = £ _____
£1.36 − 87p = _____ p
£4.00 − £1.68 = £ _____
€6.03 − €1.89 = € _____
19p × 7 = £ _____
£2.08 × 9 = £ _____
£5.78 × 6 = £ _____
£3.04 ÷ 8 = _____ p
£27 ÷ 4 = £ _____
$43.45 ÷ 5 = $ _____

D

55cm = _____ m
309mm= _____ cm
5040mm = _____ m
1095cm = _____ m
300m = _____ km
2805m = _____ km
5000m = _____ km
90g = _____ kg
875g = _____ kg
3500g = _____ kg
120ml = _____ l
650ml = _____ cm³

20.7cm = _____ mm
3.45m = _____ cm
10.6m = _____ mm
0.085km = _____ m
7.5km = _____ m
4.285km = _____ m
0.065kg = _____ g
8.11kg = _____ g
5.4l = _____ ml
0.75l = _____ ml
4.5l = _____ cm³
2.008l = _____ cm³

Find the cost of:
100g at 70p per kg _____ p
400g at 45p per kg _____ p
250g at £1.10 per ½kg _____ p
3.5kg at 18p per ½kg £ _____
450g at 70p per ½kg _____ p
75cm at £3.00 per m £ _____
10cm at £2.90 per m _____ p
20cm at £4.20 per m _____ p
1.25l at 36p per ½l _____ p
900ml at 60p per l _____ p
6.5m² at £4.50 per m². £ _____

E Fill in the missing times.

12-hour clock time	24-hour clock time
10:35 p.m.	
	04:10
12:05 a.m.	
	23:55

How many hours and minutes between
8:45 a.m. and 11:20 a.m. _____ h _____ min
10:25 a.m. and 1:05 p.m. _____ h _____ min
9:38 p.m. and 2:10 a.m. _____ h _____ min
11:50 and 13:15 _____ h _____ min
06:19 and 10:20? _____ h _____ min

How many days inclusive
from 28 March to 7 April _____
from 13 May to 4 June _____
from 15 July to 3 August _____
from 24 September to 8 November _____
from 19 October to 10 December? _____

F Approximate to the nearest:

£1 a £12.09 £ _____
10p a £2.37 £ _____

Write the answer to the nearest penny.
a ⅓ of £7.00 £ _____
c ⅛ of £17.25 £ _____

b £3.52 £ _____
b £10.06 £ _____

b £3.10 ÷ 7 _____ p
d ¼ of £3.95 _____ p

Approximate to the nearest:
centimetre 0.837m _____ cm
metre 305.6cm _____ m
kilogram 9kg 550g _____ kg
litre 6.325l _____ l
½ kilogram 7.750kg _____ kg
hour 2h 29min _____ h
½ hour 4h 21min. _____ h

CHECK-UP TEST | Number and geometry

A Change to decimal fractions. When necessary work to the nearest second place.

a $\frac{4}{5}$ b $\frac{1}{6}$ c $\frac{2}{3}$ d $\frac{7}{8}$ e $\frac{5}{7}$

B

$\frac{1}{3} + \frac{1}{2} =$ $\frac{1}{2} - \frac{1}{6} =$ $\frac{2}{3} \times 12 =$ Express as mixed numbers.

$\frac{1}{4} + \frac{1}{6} =$ $\frac{3}{4} - \frac{2}{3} =$ $10 \times 1\frac{2}{5} =$ $\frac{137}{10}$

$\frac{5}{8} + \frac{3}{4} =$ $3 - 1\frac{7}{12} =$ $1\frac{7}{10} \times 20 =$ $93 \div 8$

$\frac{3}{10} + 1\frac{1}{2} =$ $2\frac{1}{4} - 1\frac{7}{8} =$ $40 \times \frac{3}{8} =$ $124 \div 9$

C Write each fraction in its simplest form as a percentage.

a $\frac{12}{20}$ b $\frac{28}{40}$ c $\frac{45}{100}$ d $\frac{24}{32}$ e $\frac{30}{50}$

Write each of these scales as a fraction.

a 1mm to 20cm   b 1cm to 5m   c 1cm to 1km

D Fill in the table. Express the ratios as the amount given to the total amount, in their simplest form. The first example is done for you.

	fraction (simplest form)	percentage (%)	ratio		fraction (simplest form)	percentage (%)	ratio
40p of 50p	$\frac{4}{5}$	80%	4:5	50cm of 2m		%	
300g of 0.5kg		%		750g of 1.5kg		%	
700ml of 1l		%		250 of 400		%	
5p of £1		%		35p of £5		%	

E 8 cost £10. What fraction of £10 do

3 cost   7 cost?

5 cost £7. What fraction of £7 do

2 cost   8 cost?

10 cost £3.50. What fraction of £3.50 do

9 cost   15 cost?

Share each quantity in the given ratio.

£30, ratio 3:2   £   £

1.75kg, ratio 4:1   kg   g

2m, ratio 5:3   cm   cm

F Find the value of

$\frac{3}{10}$ of £1.60   p

0.75 of 600

60% of $\frac{1}{2}$kg   g

0.9 of 2l   l

50% of 3m 70cm   m   cm

$\frac{3}{100}$ of 1kg   g

0.95 of 10 000

17% of £3.00   p

$\frac{5}{9}$ of 1.8kg.   kg

Find the whole when

0.25 is £3.50   £

$\frac{3}{4}$ is 57cm   cm

10% is 850g   kg

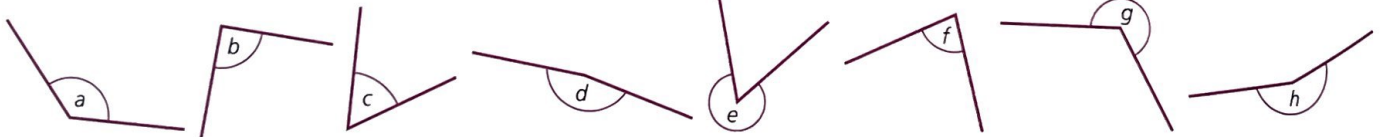0.6 is 42p   p

$\frac{5}{8}$ is 2.5kg   kg

30% is 1.8l   l

0.375 is 300

$\frac{7}{10}$ is 91p   £

5% is 200g.   kg

G Estimate which of the angles marked a – h is:

an obtuse angle of 130°   a right angle   an acute angle of 80°

   a reflex angle of 300°   a reflex angle of 240°

H Find the angle marked x and/or y in each shape.

∠x °   ∠x °   ∠x °   ∠x °   ∠x °

∠y °   ∠y °   ∠y °   ∠y °
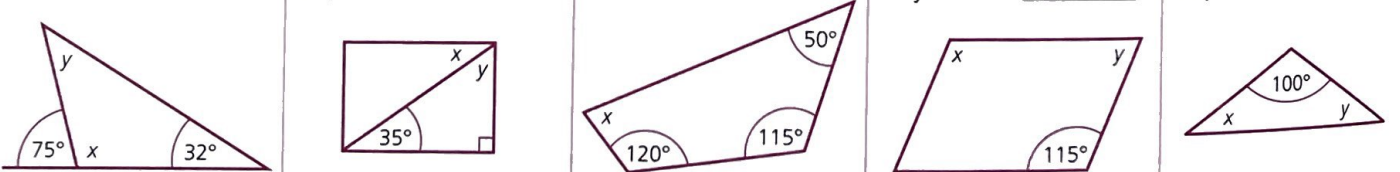
Fill in the table for regular polygons.

name of regular polygon	number of sides	angle at centre
	6	°
octagon		°
	5	°

What fraction of the circumference is the arc xy in circle A, circle B?

A

B

46

Mental Arithmetic 5
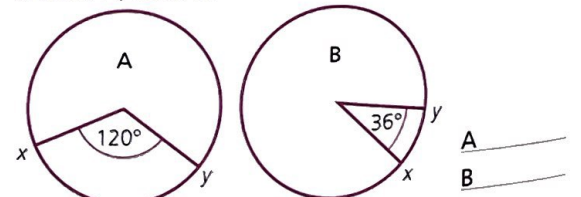
A Each of the shapes A to G is a quadrilateral.

Give the **letter** of the shape which is

a a rhombus

d a square

c a trapezium

b a rectangle

e a parallelogram.

Write the **name** of the shape (or shapes) which has:

four equal sides

four right angles

opposite sides equal and parallel

one pair only of parallel sides

diagonals which are equal

diagonals which bisect each other at right angles

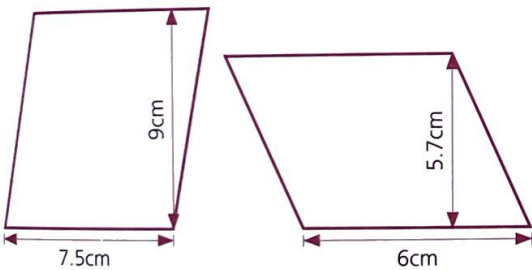Write the **letter** of the shape or shapes which have:

a no axis of symmetry

b two axes of symmetry

c four axes of symmetry

B Fill in the missing measurements. In each case give the unit of measurement.

Rectangles $A = lb$ $b = \frac{A}{l}$ $l = \frac{A}{b}$

length	breadth	perimeter	area
7cm	5.5cm		
16cm	6cm		
	8cm	36cm	
9cm		31.5cm²	
	20m		500m²

Triangles $A = \frac{bh}{2}$ $b = 2\frac{A}{h}$ $h = 2\frac{A}{b}$

base	height	area
35mm	12mm	
27cm	18cm	
	6cm	27cm²
	3cm	16.5cm²
1.6m		7.2m²

9cm

7.5cm

5.7cm

6cm

Rhombuses and parallelograms $A = bh$ $b = \frac{A}{h}$ $h = \frac{A}{b}$

base	7.5cm	6cm		1.5m	40cm
height	9.0cm	5.7cm	7cm		15mm
area			112cm²	4.5m²	

Circles $C = \pi d$ or $2\pi r$: $\pi = 3.14$

radius (r)		3cm	10cm
diameter (d)	2cm		
circumference (c)			

Cubes and cuboids $V = lbh$ $l = \frac{V}{bh}$ $h = \frac{V}{bl}$ $b = \frac{V}{hl}$

length	breadth	height	volume
8cm	5cm	9cm	
20cm	20cm	20cm	
	3.5m	2m	56m³
6.4cm		5cm	320cm³
10cm	9.3cm		186cm³

Find the volume of each of these prisms.

end area 37.5cm²

6cm

end area 48cm²

20cm

5cm

6cm

12cm