


## Practice Paper 8

# Mathematics

Read the following carefully:

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1. **Do not open or turn over the page in this booklet until you are told to do so.**
  2. This is a multiple-choice test in which you have to mark your answer to each question on the separate answer sheet. You should mark only one answer for each question.
  3. Draw a firm line clearly through the rectangle next to your answer like this . If you make a mistake, rub it out as completely as you can and put in your new answer.
  4. Be sure to keep your place on the answer sheet. Mark your answer in the box that has the same number as the question.
  5. You may not be able to finish all the questions, but try to do as many as you can. If you cannot do a question, **do not waste time on it but go on to the next.** If you are not sure of an answer, choose the one you think is best.
  6. You may do any rough working on a separate sheet of paper.
  7. **Work as quickly and as carefully as you can.**
  8. You will have **50 minutes** to do the test.
-

1

50 45 35 30 20 15 5 \_\_\_\_\_

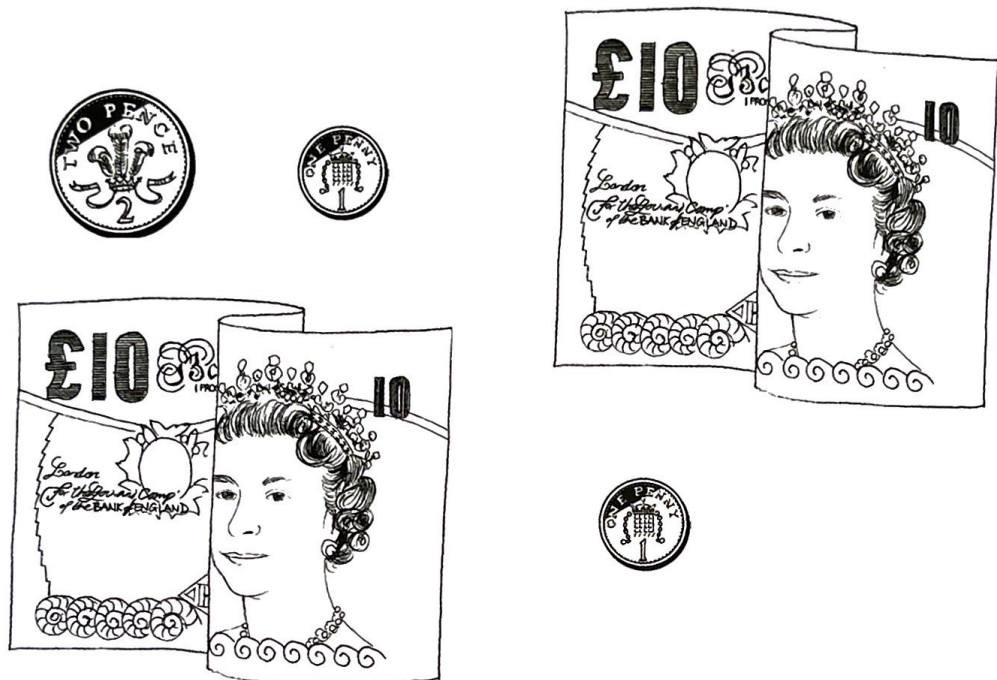
The number pattern shown above is extended by three numbers.

What is the smallest missing number?

- A -20      B -25      C -5      D -10      E -15

2

Amrit has this money:



What is the total value of the money he has?

- A £2.4      B £2.04      C £20.04      D £2.40      E £20.4

3

A packet of sprouts has these instructions for cooking them in a microwave oven.

	<b>650 watt Category B</b>	<b>750 watt Category D</b>	<b>850 watt Category E</b>
<b>Cook on full power</b>	8 mins	6 mins	4 mins
<b>Stand</b>	1 min	1 min	1 min

Alex has a Category D microwave oven.

**How long will it take him to cook the sprouts and leave them to stand?**

- A 4 minutes
- B 5 minutes
- C 6 minutes
- D 7 minutes
- E 8 minutes

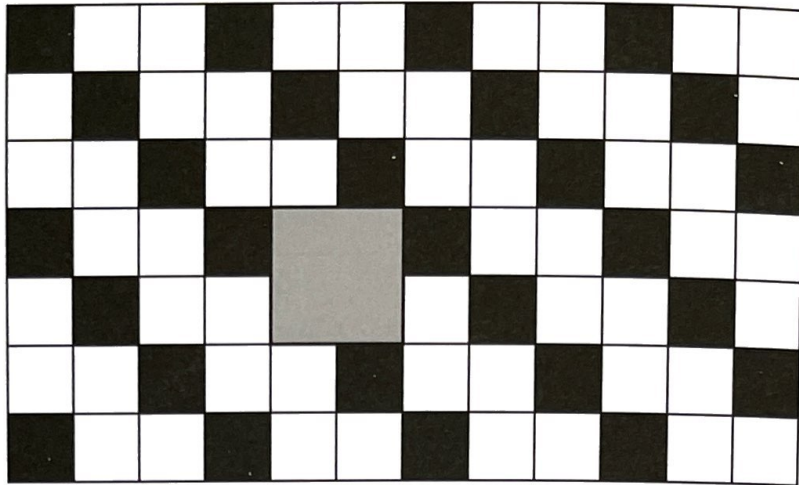
4

**How many twelfths are there in 3?**

- A 3
- B 4
- C 9
- D 12
- E 36

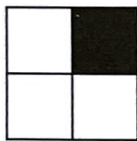
5

This pattern is made with black and white tiles.

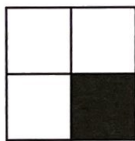


There is a gap where some of the tiles are missing.

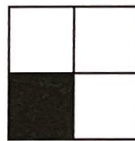
Which of these is the missing set of tiles?



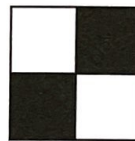
A



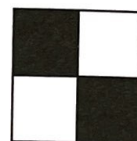
B



C



D



E

6

**Menu**

Jacket potato + filling	£3.75
Soup + roll & butter	£3.20
Quiche + chips	£6.00
Drinks	£1.00

A family chooses from the menu: 2 jacket potatoes, 3 soups and 3 drinks. They pay with a £50 note.

How much change should they receive?

A £20.10

B £29.90

C £28.90

D £21.10

E £27.90

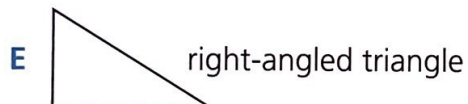
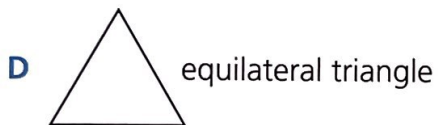


7

Look at this sorting diagram.

	Sides equal	Sides not equal
At least one right angle		
No right angles		

Which of these shapes should go in the shaded cell on the sorting diagram?



8

36 12 48 24 60

Which factor below does not go exactly into all of the numbers above?

A 6

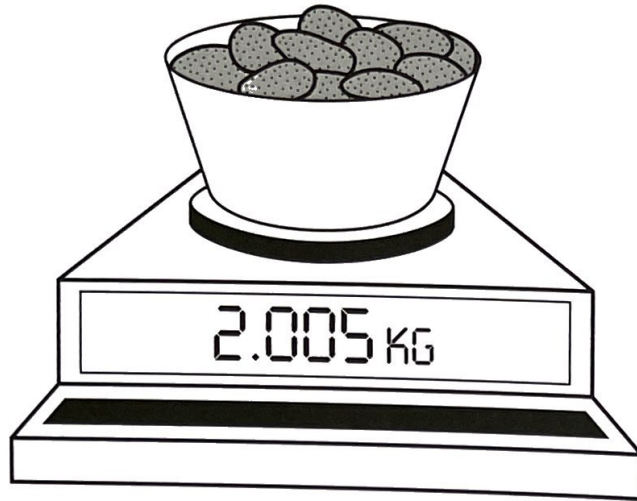
B 4

C 3

D 2

E 8

9



How much do these potatoes weigh?

- A two thousand and five kilograms
- B two and a half kilograms
- C two kilograms and five hundred grams
- D two kilograms and fifty grams
- E two kilograms and five grams

10

Which of these gives the answer 1200?

- A 1149 rounded to the nearest 100
- B 1196 rounded to the nearest 10
- C 1207 rounded to the nearest 10
- D 1274 rounded to the nearest 100
- E 12327 rounded to the nearest 100

11

A plant catalogue offers the following plants for sale.

Plant	Height when fully grown	Price
Aster	1.5 metres	1 for £4.99 3 for £12.00
Foxglove	1 metre	1 for £4.99 3 for £12.00
Geranium	30 centimetres	1 for £5.99 3 for £15.00
Helenium	1 metre	1 for £4.99 3 for £12.00
Iris	1 metre	1 for £5.99 3 for £15.00

Which two kinds of plant have the same price and will grow to the same height?

- A aster and geranium
- B aster and helenium
- C foxglove and helenium
- D foxglove and iris
- E geranium and iris

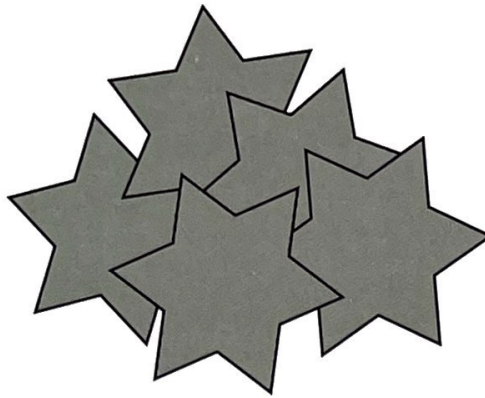
12

Duncan has 20 biscuits.  
Together, they weigh 300 grams.  
Duncan eats three of the biscuits.

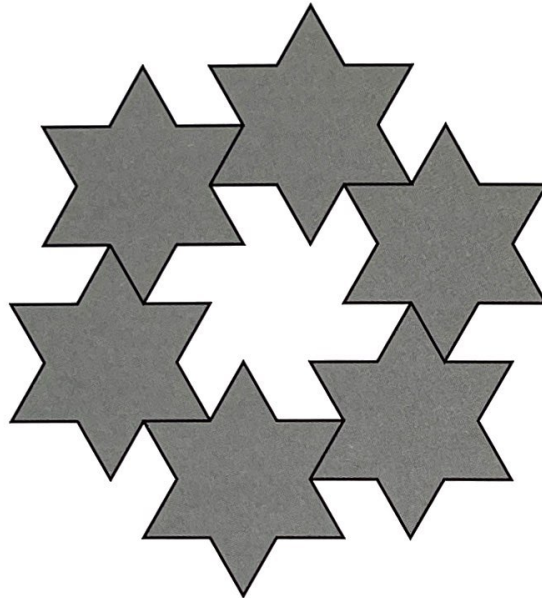
How many grams of biscuits does Duncan eat?

- A 30g
- B 35g
- C 40g
- D 45g
- E 50g

Ben has a lot of regular six-pointed stars.



The edges of the stars are 3 centimetres long.  
He fits six of the stars together to make this pattern.



**What is the perimeter of the hole in the middle of Ben's pattern?**

- A 9 cm
- B 12 cm
- C 45 cm
- D 54 cm
- E 72 cm



14

Sandwiches cost £1.75 each.

What is the greatest number of sandwiches that Alisha can buy with £5?

A 2

B 3

C 4

D 5

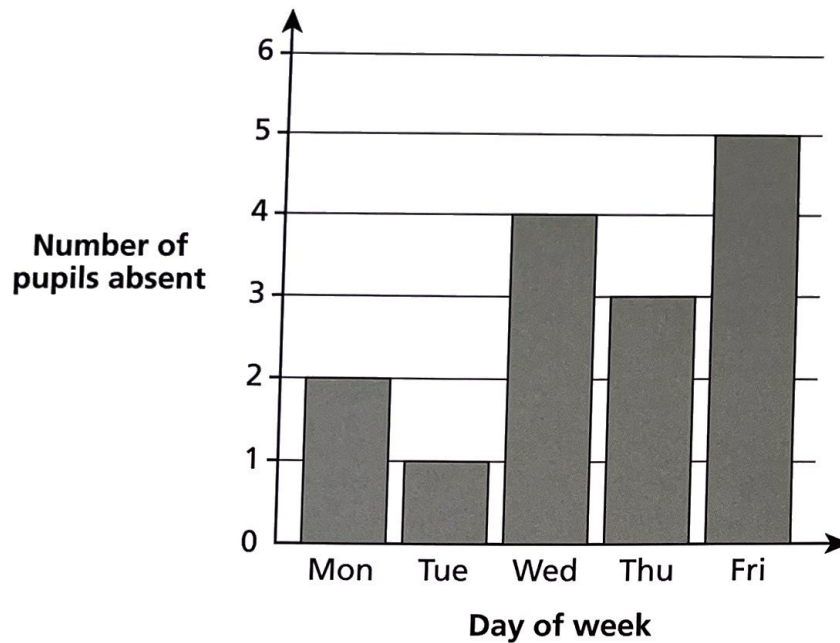
E 6

15

There are 32 pupils in Class 5T.

Mrs Stephenson checked class attendance across one week.

The bar chart shows the number of pupils who were absent each day.



What was the greatest number of pupils present on any one day?

A 31

B 5

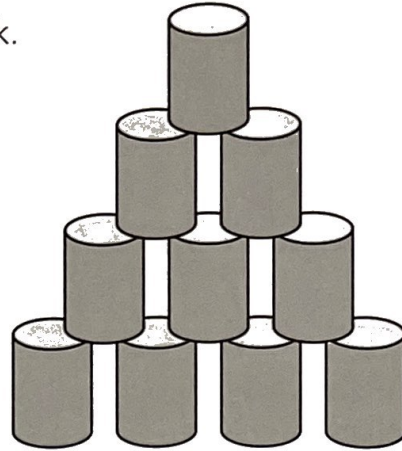
C 27

D 1

E 32

16

There are 10 cans in this stack.  
The stack is 4 cans high.

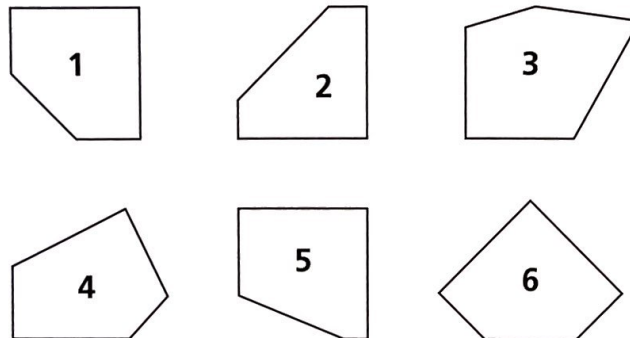


How many cans would there be in a stack like this that was 8 cans high?

- A 15      B 18      C 20      D 28      E 36

17

Look at the six pentagons below.



Which two of the pentagons are exactly the same shape?

- A 2 and 1      B 1 and 6      C 2 and 5      D 4 and 3      E 6 and 5

18

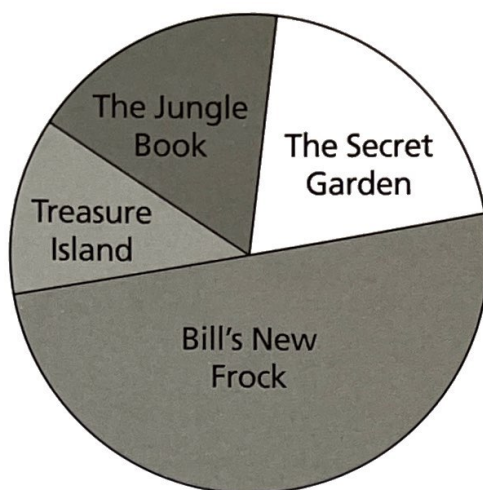
The original price of a coat was £81.  
During a sale, the price of the coat was reduced by £9 each week.

After how many weeks would the price of the coat be less than half of the original price?

- A 5      B 7      C 9      D 11      E 13

19

Each pupil in a reading club reads one of four books.  
The chart shows the proportion of pupils who read each book.



24 pupils read *Bill's New Frock*.

**How many pupils are in the reading club?**

- A 24                      B 48                      C 50                      D 100                      E 180

20

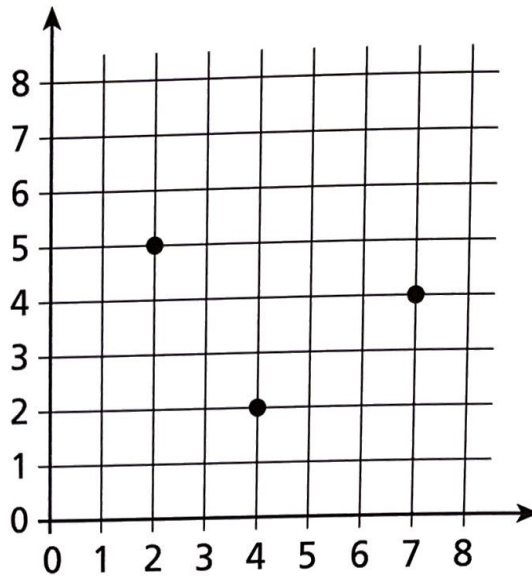
Marcus multiplies a number by 96, then divides the answer by 4.  
Sanjit does a different calculation, which has the same result.

**Which of these could be Sanjit's calculation?**

- A Multiply the number by 4, then multiply the answer by 8.  
B Multiply the number by 52, then divide the answer by 2.  
C Multiply the number by 8, then multiply the answer by 3.  
D Multiply the number by 155, then divide the answer by 5.  
E Multiply the number by 21, then multiply the answer by 3.

21

The diagram below shows three corners of a square.



What are the coordinates of the fourth corner?

- A (4, 7)      B (7, 4)      C (5, 5)      D (5, 7)      E (7, 5)

22

Karen counts backwards from 24 in steps of 7.

Which of these numbers will she reach?

- A 1      B 2      C 3      D 4      E 5



23

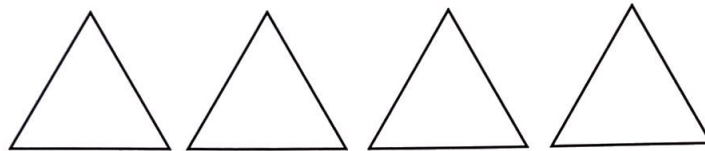
This table shows the results of a maths test.

Test result	Frequency
0–10	3
11–20	6
21–30	15
31–40	9
41–50	12

Which one of these statements is true?

- A 43 children were tested altogether.
- B 10 children scored less than 21.
- C Less than half of the children scored more than 20.
- D 24 children scored between 11 and 40.
- E A third of the children scored between 21 and 30.

24



Joshua has four identical equilateral triangles.  
He fits them all together to make a solid quadrilateral.

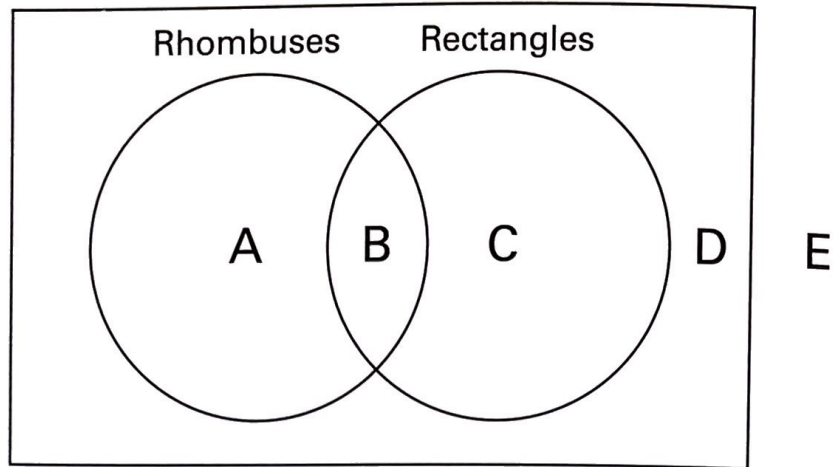
Which quadrilateral does he make?

- A square
- B kite
- C parallelogram
- D rectangle
- E trapezium

25

To which of these areas (A, B, C, D, E) does a square belong?

**Parallelograms**



A A

B B

C C

D D

E E

26

Gemma swims nine lengths of a swimming pool.  
She swims 160 metres altogether.

**What is the length of the pool, to the nearest whole metre?**

A 7m

B 8m

C 17m

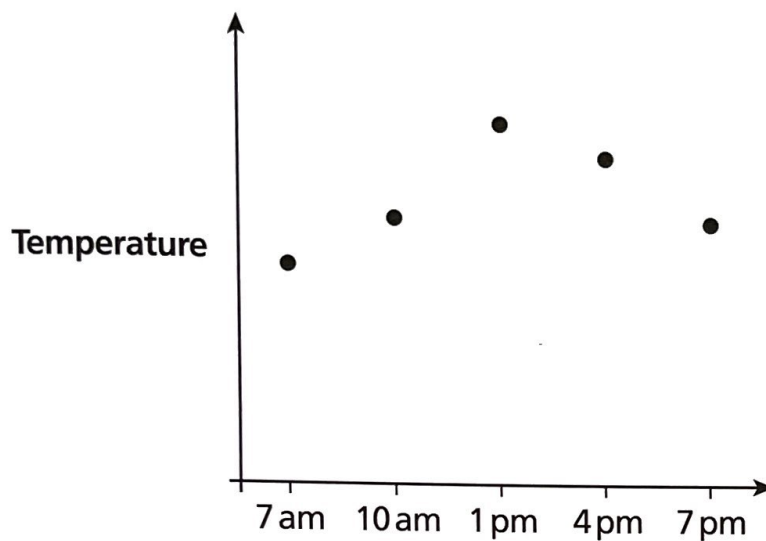
D 18m

E 20m

Lily recorded the temperature at different times of the day for five days. The table shows her results.

		Day				
		Monday	Tuesday	Wednesday	Thursday	Friday
Time	7 am	11°	14°	12°	9°	8°
	10 am	13°	16°	14°	10°	10°
	1 pm	14°	17°	17°	11°	13°
	4 pm	15°	19°	18°	14°	12°
	7 pm	14°	16°	16°	12°	10°

Lily plotted the results for one day on a graph. She forgot to label the vertical axis of her graph.



Which day's results did Lily plot?

- A Monday
- B Tuesday
- C Wednesday
- D Thursday
- E Friday

28

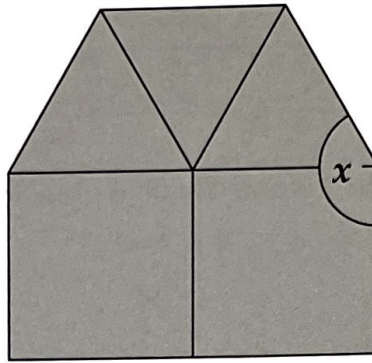
Nazir is thinking of a number.  
He divides his number by 15, and the answer is a whole number.

Which of these could be Nazir's number?

- A 500      B 505      C 510      D 515      E 520
- 

29

Pat made this shape with squares and equilateral triangles.



What is angle  $x$  in Pat's shape?

- A  $150^\circ$       B  $120^\circ$       C  $90^\circ$       D  $135^\circ$       E  $165^\circ$
- 

30

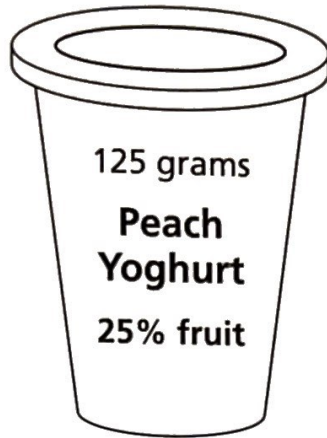
Some pupils sold cups of tea at the school fair.  
Each cup of tea cost 20p to make.  
The pupils sold the cups of tea for 80p each.  
They sold 298 cups of tea.

How much profit did the pupils make, after they had paid for the cost of making the cups of tea?

- A £174.04  
B £177.02  
C £177.40  
D £178.80  
E £179.40



31



What fraction of the yoghurt is fruit?

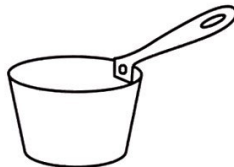
- A  $\frac{1}{3}$       B  $\frac{1}{4}$       C  $\frac{1}{5}$       D  $\frac{1}{6}$       E  $\frac{1}{8}$

32

What is  $270 \div (50 \times 1.8)$ ?

- A 3      B 9.72      C 30      D 33      E 97.2

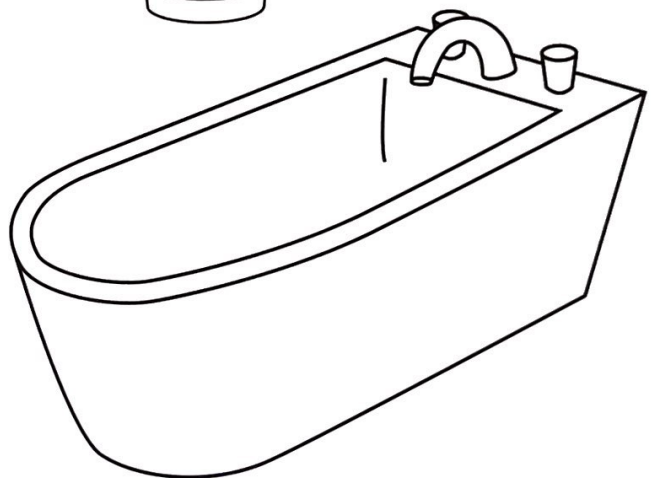
33



Mrs Shaw has 175 ml of liquid.  
She needs a container for it.

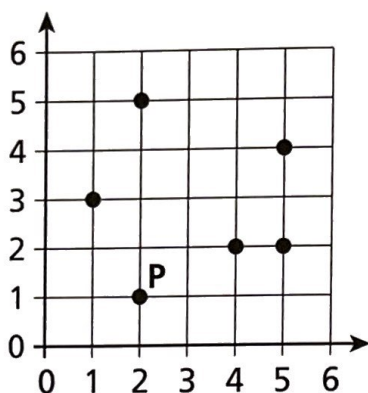
Which one suits her needs best?

- A mug  
B egg cup  
C large saucepan  
D bucket  
E bath



# 34

The point P is one corner of a right-angled triangle.

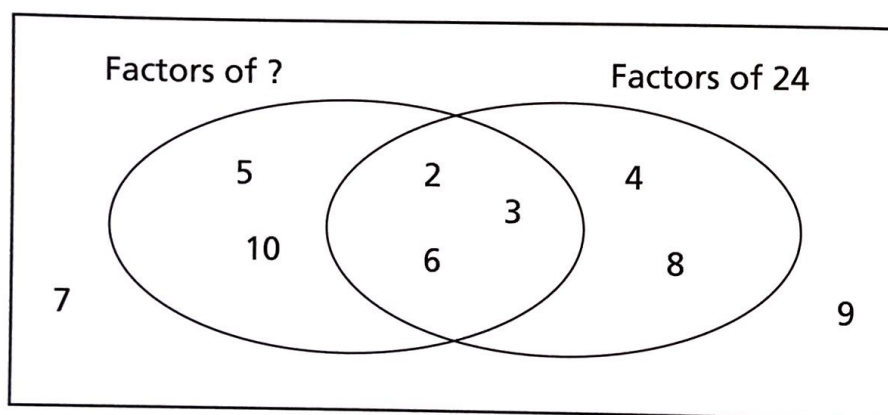


Which of these pairs of points could be the other two corners of the right-angled triangle?

- A (5, 2) and (2, 5)
- B (2, 5) and (4, 2)
- C (5, 2) and (1, 3)
- D (5, 4) and (5, 2)
- E (1, 3) and (4, 2)

# 35

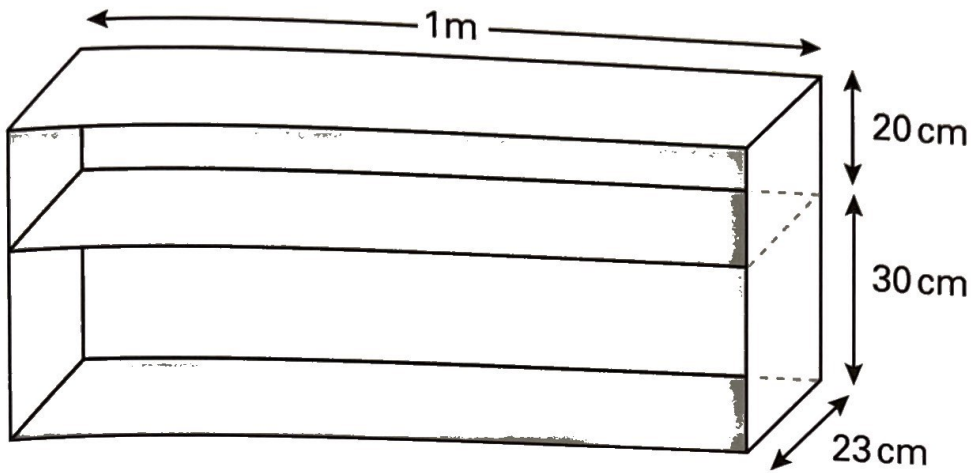
Look at the numbers sorted on this Venn diagram.



What is the missing number in the first label?

- A 10
- B 12
- C 15
- D 20
- E 30

36



The diagram shows a wooden bookcase with a base, one shelf and a top. It is open at the front and has wood at the back and sides.

**What is the total area of wood needed for the bookcase?**

- A**  $1.92 \text{ m}^2$     **B**  $0.925 \text{ m}^2$     **C**  $1.42 \text{ m}^2$     **D**  $1.19 \text{ m}^2$     **E**  $0.97 \text{ m}^2$

37

The kitchen clock says 4 o'clock.

**What is the obtuse angle between the clock hands?**

- A**  $33^\circ$     **B**  $40^\circ$     **C**  $90^\circ$     **D**  $120^\circ$     **E**  $150^\circ$

38

**Round 32.47 kilometres to the nearest 100 metres.**

- A** 30 km    **B** 32 km    **C** 32.3 km    **D** 31.5 km    **E** 32.5 km

39

**How many different lines can be drawn between the vertices (corners) of a regular hexagon?**

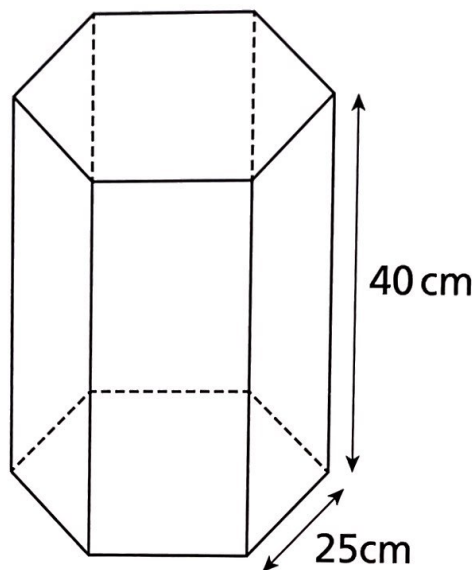
- A** 5    **B** 18    **C** 6    **D** 8    **E** 9

40

Which one of these is the greatest?

- A  $\frac{3}{4}$  of 40
- B 25% of 30
- C  $\frac{2}{3}$  of 15
- D 75% of 10
- E  $\frac{1}{2}$  of 25

41



The diagram shows a glass tank.  
The base is a regular hexagon.  
The sides are rectangles.

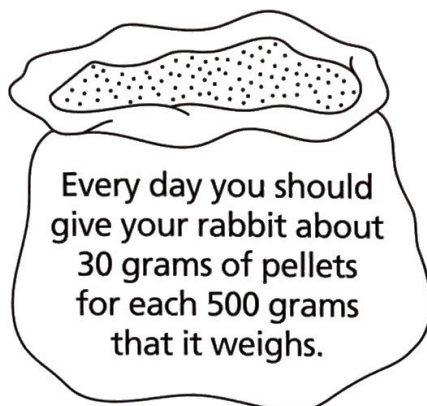
What area of glass is needed to make all six of the sides?

- A  $540 \text{ cm}^2$
- B  $780 \text{ cm}^2$
- C  $3000 \text{ cm}^2$
- D  $6000 \text{ cm}^2$
- E  $12000 \text{ cm}^2$



42

Zonia's rabbit weighs 3 kilograms.  
She buys a bag of rabbit food pellets weighing 3.6 kilograms.  
The information on the bag of rabbit food says:



**About how many weeks should the bag of rabbit food last?**

- A about one week
- B about two weeks
- C about three weeks
- D about four weeks
- E about five weeks

43

In an election, 25 085 978 people voted.  
One party received 2 248 226 votes.

**Which is closest to the percentage of people who voted for this party?**

- A 12%
- B 80%
- C 1%
- D 9%
- E 5%

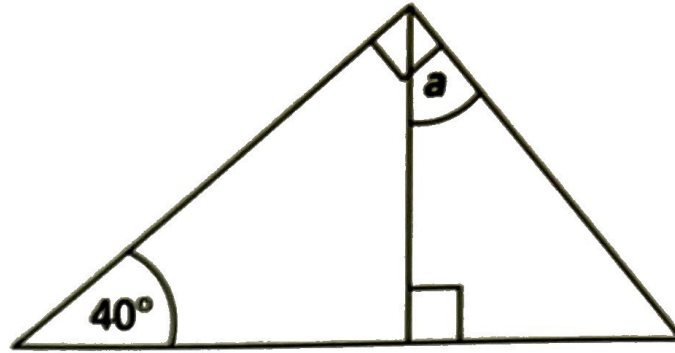
44

Anna and Ricardo won some money. They shared it equally. They each got £12.  
Carla, David, Ella and Fran won three times as much money as Anna and Ricardo.  
They shared it equally.

**How much did each person get?**

- A £18.00
- B £6.00
- C £8.00
- D £4.00
- E £9.00

45



What is the value of angle  $a$  in the diagram above?

- A  $35^\circ$       B  $40^\circ$       C  $60^\circ$       D  $50^\circ$       E  $45^\circ$

46

John and Ali start counting on from 0.  
They each count on in steps of a different size.  
The first number that John and Ali both reach is 120.

What size steps could they have been counting in?

- A 10 and 12      B 11 and 13      C 9 and 14      D 8 and 15      E 6 and 20

47

Hayley has drawn a kite.

Which property **MUST** the drawing have?

- A Opposite sides are parallel.  
B The diagonals are equal in length.  
C The shape has two lines of symmetry.  
D The diagonals intersect at right angles.  
E All angles are equal.

48

Mr Firat needs to buy posts and panels for a new fence of length 8.5 metres. The panels are 2 metres wide. The posts are 10 centimetres wide. There are posts between all of the panels, and one at each end of the fence.

**How many posts and panels should Mr Firat buy?**

- A 4 panels and 4 posts
- B 4 panels and 5 posts
- C 5 panels and 5 posts
- D 5 panels and 6 posts
- E 6 panels and 6 posts

49

A flea has a height of 2 mm. It can jump to a height 80 times its own height.

**To what height, in centimetres, can the flea jump?**

- A 16 cm
- B 1.6 cm
- C 0.16 cm
- D 160 cm
- E 0.016 cm

50

One day on the planet Uranus lasts 17.24 hours.

**What is 17.24 hours in hours, minutes and seconds?**

- A 17 hours, 14 minutes, 4 seconds.
- B 17 hours, 20 minutes, 4 seconds.
- C 17 hours, 14 minutes, 40 seconds.
- D 17 hours, 20 minutes, 40 seconds.
- E 17 hours, 14 minutes, 24 seconds.