

# MATHS

## *Multiple-Choice*

### *Familiarisation Test 7*

**Read the following carefully:**

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1. Do not turn over this booklet until you are told to do so.
  2. This is a multiple-choice test.
  3. You may do any rough working on a separate sheet of paper.
  4. Answers should be marked on the answer sheet provided, not on the test booklet.
  5. Mark your answer in the column that has the same number as the test question by drawing a firm line clearly through the rectangle next to your answer.
  6. If you make a mistake, rub it out as completely as you can and put in your new answer. You should only mark one answer for each question.
  7. Be sure to keep your place on the answer sheet.
  8. Work as carefully and quickly 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.
  9. You will have 50 minutes to do the test.
- 



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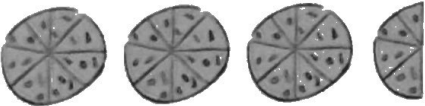
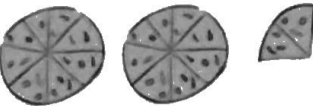
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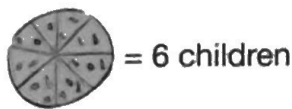
Code MCM7 9(6.16)

Author: Tandi Clausen-May

QUESTION 1

The pictogram shows the number of children who liked three different sorts of pizza.

| Pizza     | Number of children                                                                |
|-----------|-----------------------------------------------------------------------------------|
| Tomato    |  |
| Chicken   |  |
| Vegetable |  |



How many children liked chicken pizza?

- A  $3\frac{1}{2}$
- B 4
- C 21
- D 24
- E 28

QUESTION 2

Oranges  
45p each

Apples  
35p each

Bananas  
25p each



Which of these cost exactly £1.50?

- A 3 oranges, 1 banana
- B 3 apples, 1 banana
- C 1 orange, 2 apples, 1 banana
- D 2 oranges, 1 apple, 1 banana
- E 1 orange, 1 apple, 2 bananas

QUESTION 3

Which of these statements could be true?

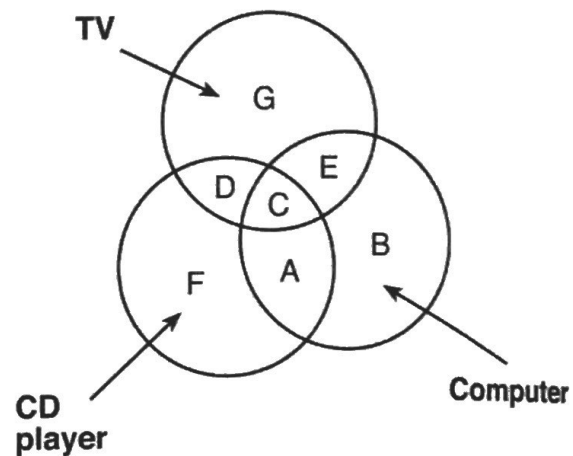
- A Jack's teacher is 0.17 centimetres tall.
- B Jack's teacher is 0.17 metres tall.
- C Jack's teacher is 1.7 centimetres tall.
- D Jack's teacher is 1.7 metres tall.
- E Jack's teacher is 17 centimetres tall.

QUESTION 4

$$63 \times 324 = 20,412$$

What is  $63 \times 648$ ?

QUESTION 5



The three circles represent the children in a class who have TVs, CD players and computers.

Which area shows the children who do not have a TV?

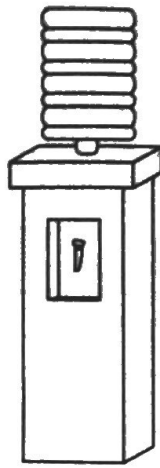
- A  $B + A + F$
- B  $G - B - F$
- C  $B + A + F + D + C + E$
- D  $G + D + C + E$
- E  $F + A + B + A$

QUESTION 6

A full water cooler bottle contains 19 litres of water.

Yu Lin puts 250 millilitres of water into each of 3 cups.

How much water is left in the bottle?



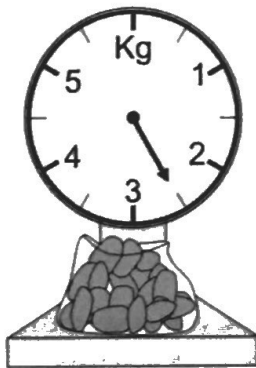
QUESTION 7

One evening Tia started her homework at half past four.

She finished it at twenty minutes to six.

How long did her homework take?

QUESTION 8

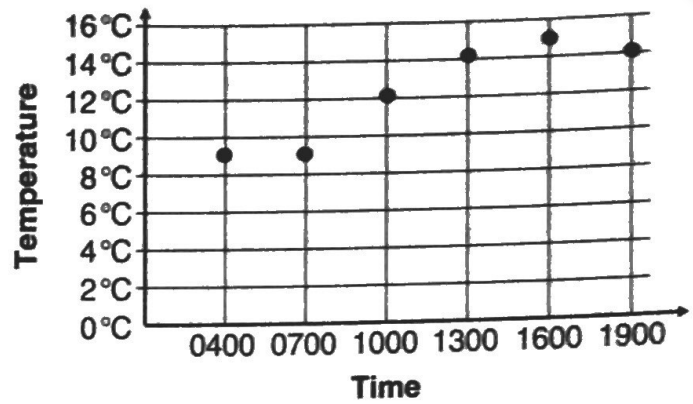


Potatoes cost 70p a kilo.

What is the cost of these potatoes?

QUESTION 9

The graph shows the temperature at different times on one day.



What was the range in the temperatures?

QUESTION 10

Which of these is the greatest number?

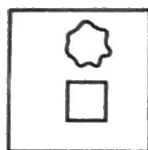
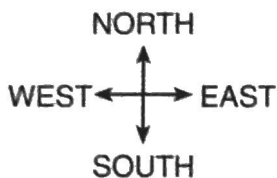
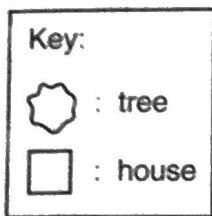
- 0.87
- 14.27
- 25.3
- 3.69
- 4.48

QUESTION 11

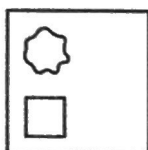
Callum is facing south-east.

He can see a tree in front of him, and a house on his right.

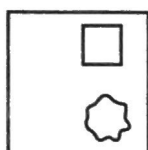
Which map is he on?



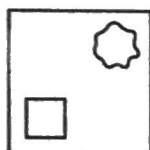
A



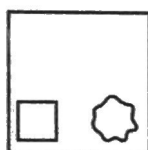
B



C



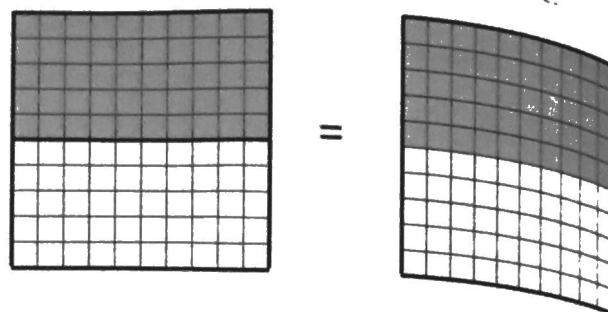
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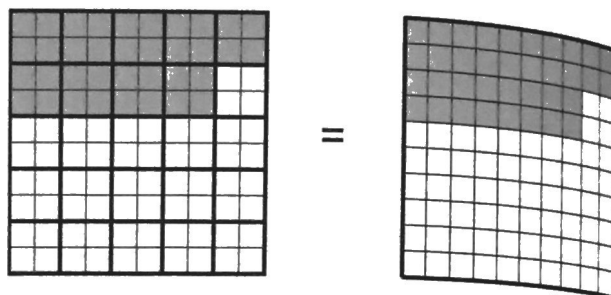
E

QUESTION 12

These diagrams show that  $\frac{1}{2} = 50\%$ .



What do these diagram show?



- A  $\frac{1}{4} = 25\%$
- B  $\frac{9}{20} = 45\%$
- C  $\frac{1}{5} = 20\%$
- D  $\frac{1}{3} = 33\frac{1}{3}\%$
- E  $\frac{9}{25} = 36\%$

QUESTION 13

Mrs Woods ordered some school textbooks.

She worked out her order on rough paper.

She then began to copy the order onto the order form, as shown below.

| Textbook | Price | Number required | Total price |
|----------|-------|-----------------|-------------|
| Science  | £3    |                 |             |
| History  | £4    | 3               | £12         |
| Maths    | £3.50 | 8               | £28         |
|          |       | <b>Postage</b>  | £3          |
|          |       | <b>Total</b>    | £58         |

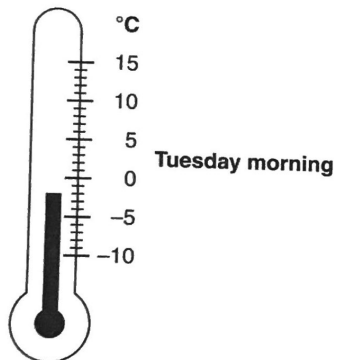
How many science books did she order?

**QUESTION 14**

A rectangle has a perimeter of 30 cm.  
One of the shorter sides is 4 cm.  
What is the length of one of the longer sides?

**QUESTION 15**

Class 5 recorded the outside temperature every morning and afternoon.  
On Tuesday morning Nina read the temperature.



In the afternoon the temperature had gone up by 6°.

What was the temperature in the afternoon?

- 4°C
- 8°C
- 2°C
- 6°C
- 10°C

**QUESTION 16**

Ravi divides a large number by a smaller number.

The remainder is 5.

Which of these numbers could he have divided by?

- 2
- 3
- 4
- 5
- 6

**QUESTION 17**

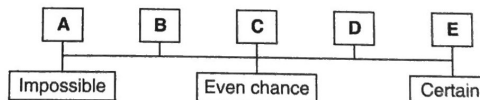
The table shows how many pots of different flavours of yoghurt there are in a pack of twelve.

| Flavour    | Number |
|------------|--------|
| Cherry     | 3      |
| Hazelnut   | 1      |
| Peach      | 2      |
| Strawberry | 4      |
| Toffee     | 2      |



Sue picks a pot of yoghurt at random.

Which point on the probability scale shows the probability that she will pick a fruit yoghurt?



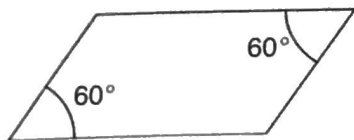
## QUESTION 18

What is 34.96 rounded to the nearest tenth?

## QUESTION 19

Two of the angles in this parallelogram are  $60^\circ$ .

What are the other two angles?



## QUESTION 20

Ben writes a sequence of numbers, starting with 6, 7. He uses the rule:

**Add up the last two numbers, and then subtract 3.**

The first five numbers in the sequence are

6    7    10    14    21    ...

What is the seventh number in Ben's sequence?

## QUESTION 21

### More dogs choose Doggo Biscuits!

In an independent experiment nearly one in five dogs chose Doggo Biscuits, but only 25% chose the next favourite biscuit.

This advertisement is misleading.

Why is it misleading?

- A According to the figures in the advertisement, fewer dogs chose Doggo Biscuits than the next favourite biscuit.
- B The experiment cannot have been independent.
- C The dogs in the experiment were all more used to Doggo Biscuits than to other sorts of biscuit.
- D It does not say what the other dogs did.
- E The dogs might change their minds next time.

## QUESTION 22

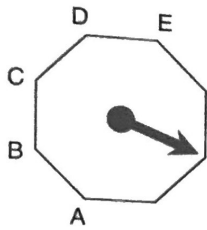
A crate contains 48 tins of beans and weighs 24.8 kilograms.

The empty crate weighs 800 grams.

What is the weight of one tin of beans?

QUESTION 23

The arrow is pointing towards one corner of a regular octagon.



The arrow turns clockwise through  $225^\circ$ .  
Which corner is it pointing towards now?

QUESTION 24

A swimming pool charges £2.50 for entry.

You can save  $\frac{1}{5}$  of the entry fee with a membership card.

Briony buys a membership card, which cost £3

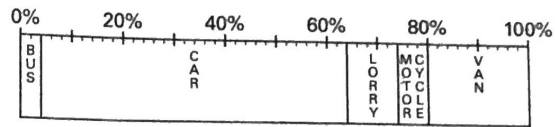
After how many visits will she have saved the price of the card?

QUESTION 25

Thomas walks to school each day.

One morning he recorded the types of vehicles that passed him.

He drew this chart to show the data.



50 vehicles passed him altogether.

How many vans were there?

- 5
- 10
- 20
- 80
- 100

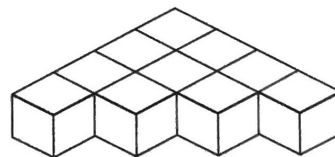
QUESTION 26

Which of these numbers has the smallest value?

- 1
- 1
- 0
- 2
- 2

QUESTION 27

This solid is made from 10 small wooden cubes.



The whole solid is painted red.

How many of the small cubes have only 2 faces painted red?

QUESTION 28

A number is first squared, then divided by 10.

The number ends up as 1.6.

What was the number at the start?

QUESTION 29

Tina counted the number of carrots in ten bags.

The table shows her results.

|                            |   |   |    |    |    |
|----------------------------|---|---|----|----|----|
| Number of carrots in a bag | 8 | 9 | 10 | 11 | 12 |
| Number of bags             | 2 | 4 | 2  | 1  | 1  |

What is the mode of the number of carrots in a bag?

QUESTION 30

Ruby and Hamal each had a packet of biscuits. The two packets had the same number of biscuits.

Ruby gave half of her biscuits to Mike.

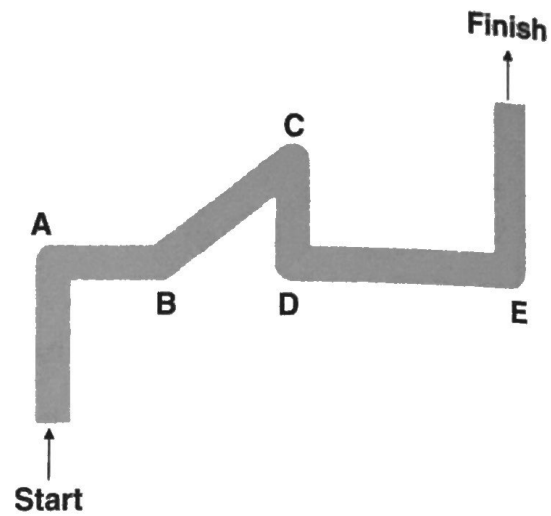
Hamal gave a quarter of his biscuits to Mike.

Which one of these statements is now true?

- A Ruby has more biscuits than Mike.
- B Hamal has more biscuits than Mike.
- C Ruby and Hamal each have the same number of biscuits.
- D Ruby and Mike each have the same number of biscuits.
- E Hamal and Mike each have the same number of biscuits.

QUESTION 31

A robot moves along this path from Start to Finish.



At what point does the robot turn through more than a right angle?

QUESTION 32

Which one of these sums gives the largest answer?

- A  $17 \times 18 + 16 - 15$
- B  $18 \times 17 + 15 - 16$
- C  $15 \times 16 + 17 - 18$
- D  $17 \times 16 + 18 - 15$
- E  $15 \times 17 + 18 - 16$

QUESTION 33

The table shows Mr Samson's journey times to work each day in one week.

|           | Time leaving home | Time arriving at work |
|-----------|-------------------|-----------------------|
| Monday    | 7:05 am           | 7:40 am               |
| Tuesday   | 7:10 am           | 7:55 am               |
| Wednesday | 7:15 am           | 7:50 am               |
| Thursday  | 7:05 am           | 7:45 am               |
| Friday    | 7:00 am           | 7:45 am               |

What was his mean (average) journey time?



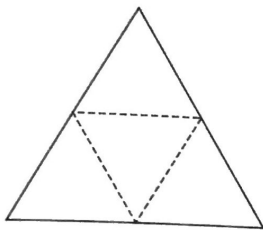
QUESTION 34

Kumi buys four mugs of tea.

He pays with a five pound note, and he gets £1.60 change.

What is the cost of one mug of tea?

QUESTION 35



This net is cut out of cardboard.

It is folded along the dashed lines.

Which shape will it make?

- triangular prism
- square-based pyramid
- cuboid
- triangular pyramid
- none of these

QUESTION 36

A recipe needs 500 g of flour and 150 ml of milk.

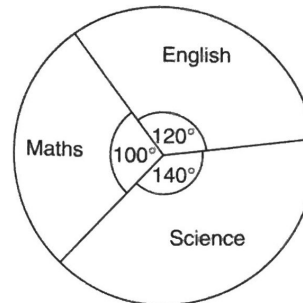
Mr Price has only 400 g of flour.

How much milk should he use?

QUESTION 37

A group of children was asked which subject they preferred out of English, Maths and Science.

The results are shown in this pie chart:



The number who chose English was 2 greater than the number who chose Maths.

How many children were asked altogether?

QUESTION 38

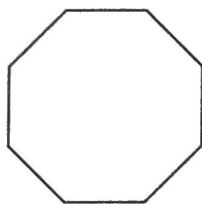
Yola started at 0 and counted up in steps of  $\frac{1}{4}$ .

Which of these numbers did she count?

- 1
- 2
- 3
- 4
- 5

QUESTION 39

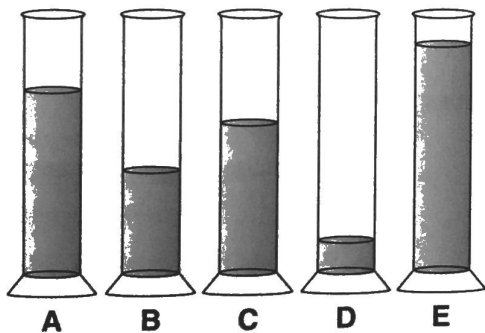
Jackie draws two lines in this regular octagon to divide it into four quadrilaterals that are all the same size and shape.



What kind of quadrilateral are they?

- kites
- rectangles
- parallelograms
- squares
- trapeziums

QUESTION 40

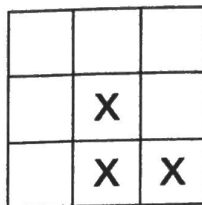


A container can hold 1 litre of liquid.

Kieran has put 75 ml of water in it.

Which diagram best shows the correct water level?

QUESTION 41



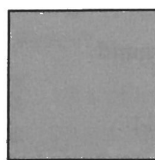
One more cross is placed at random in one of the empty squares on the grid.

What is the probability that it will complete a line of three crosses?

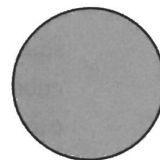
- A  $\frac{1}{6}$
- B  $\frac{1}{3}$
- C  $\frac{1}{2}$
- D  $\frac{2}{9}$
- E  $\frac{1}{9}$

QUESTION 42

Lucy has some square tiles with area  $s$  and some circular tiles with area  $c$ .



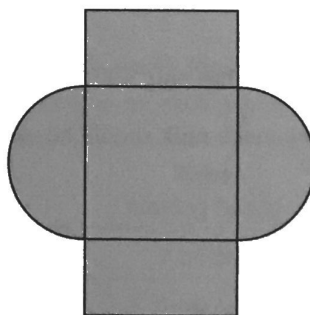
Area  $s$



Area  $c$

She cuts some of her tiles in half.

She puts some tiles together to make a shape.

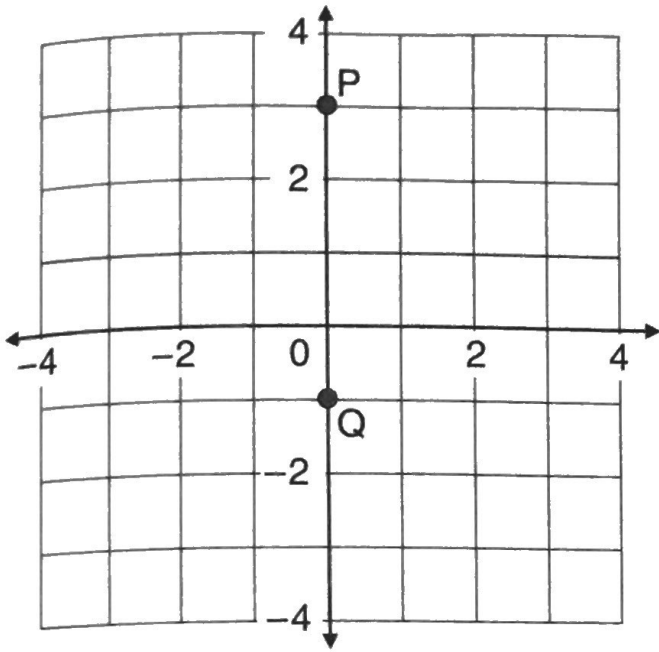


What is the area of Lucy's shape?

- $s + 4c$
- $2s + c$
- $2s + 2c$
- $3s + c$
- $3s + 2c$

QUESTION 43

Points P and Q are two corners of a square.



Which of these points could be the other two corners of the square?

- (-2, 1) and (2, 1)
- (-4, -1) and (4, 3)
- (-1, 4) and (3, -4)
- (1, 2) and (1, -1)
- (4, -1) and (-4, 3)

QUESTION 44

There are 27 children in a club.

Which one of these statements cannot be true?

- A There are more boys than girls in the club.
- B There are more girls than boys in the club.
- C There are three more boys than girls in the club.
- D There are six more girls than boys in the club.
- E There are nine more boys than girls in the club.

QUESTION 45

Look at these four expressions.

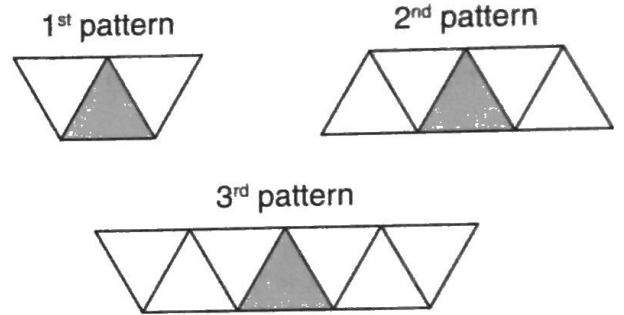
$$n \quad n + 3 \quad n + 4 \quad n + 5$$

What is their mean value?

- $n$
- $n + 3$
- $n + 4$
- $n + 5$
- $n + 12$

QUESTION 46

This is a series of patterns made from black tiles and white tiles.



Which formula represents the number of tiles in the  $n$ th pattern in the series?

- $-1 + 2n$
- $-1 - 2n$
- $2 + n$
- $1 + n$
- $1 + 2n$

QUESTION 47

Mr Robinson wants to paint both sides of his garden fence.

The fence is 20 metres long and 1.4 metres high.

1 litre of paint will cover 10 square metres of fence.

How many 1 litre tins of paint must he buy?

QUESTION 48

The diameter of a 2p coin is 2.5 cm.

A line of 2p coins was laid for charity.

Each coin touched the coins on either side.

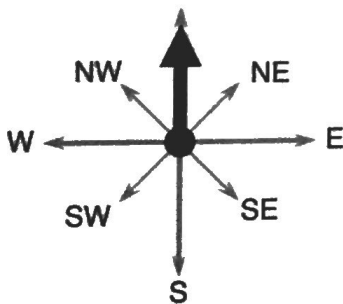
The amount of money collected was £12.

How long was the line, in metres?



QUESTION 49

The pointer turns clockwise from North to South East.



What angle does it turn through?

QUESTION 50

Mrs Harrison's washing machine broken down.

The repair company have a callout charge of £30.

Then they charge £20 per hour.

Which expression gives the cost, in pounds, of a repair lasting  $x$  hours?

$20x$

$50x$

$20x + 30$

$30x + 20$

$30x$