

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel  
International GCSE**

Centre Number

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Candidate Number

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**Tuesday 3 November 2020**

Morning (Time: 2 hours)

Paper Reference **4MA1/1FR**

**Mathematics A**

**Paper 1FR  
Foundation Tier**



**You must have:**

Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

**Instructions**

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page. Anything you write on the formulae page will gain NO credit.

**Information**

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

**Advice**

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

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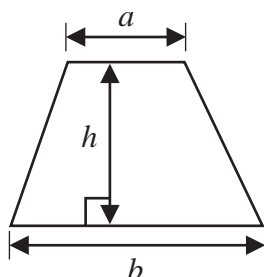
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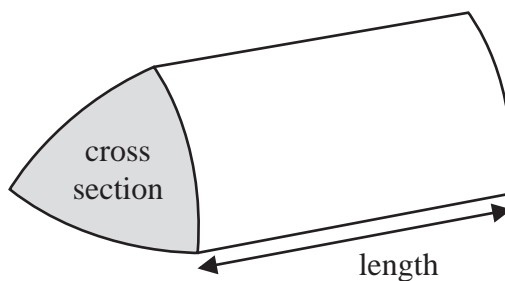
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International GCSE Mathematics  
Formulae sheet – Foundation Tier

Area of trapezium =  $\frac{1}{2}(a + b)h$

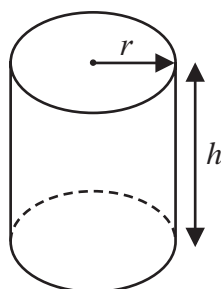


Volume of prism = area of cross section  $\times$  length



Volume of cylinder =  $\pi r^2 h$

Curved surface area of cylinder =  $2\pi r h$



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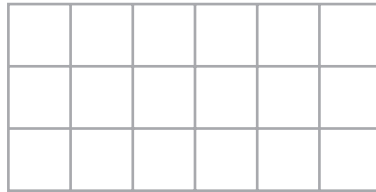


Answer ALL TWENTY SEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Here is a shape made of squares.



- (a) Shade  $\frac{1}{6}$  of the shape.

(1)

- (b) Change  $\frac{19}{5}$  into a mixed number.

.....  
(1)

$\frac{7}{11}$  of a class walk to school.

- (c) What fraction of the class do **not** walk to school?

.....  
(1)

- (d) Write down a fraction that is equivalent to  $\frac{7}{9}$

.....  
(1)

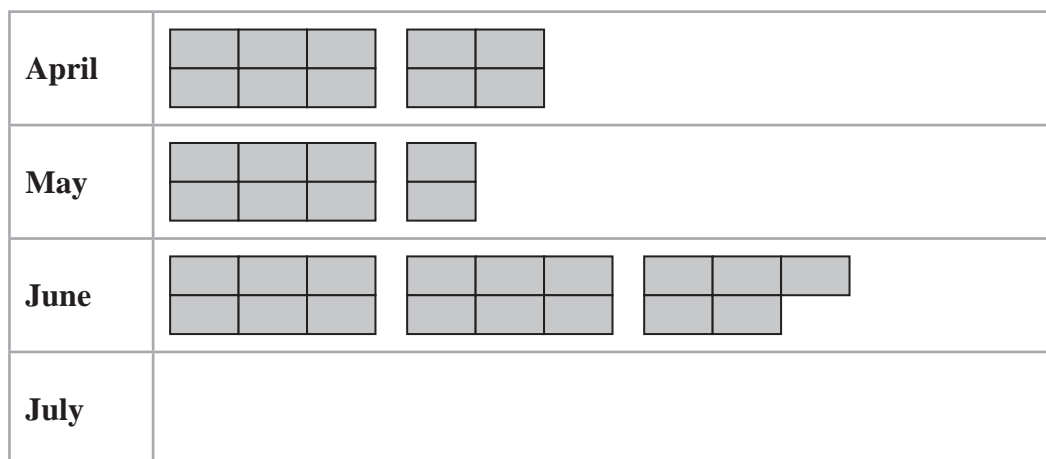
- (e) Write 0.03 as a fraction.

.....  
(1)

(Total for Question 1 is 5 marks)



- 2 The pictogram gives information about the number of eggs laid by Ellie's chickens in April, in May and in June.



 represents 24 eggs

- (a) How many eggs were laid by Ellie's chickens in April?

.....  
(1)

Ellie's chickens laid more eggs in June than in May.

- (b) How many more?

.....  
(2)

Ellie's chickens laid 52 eggs in July.

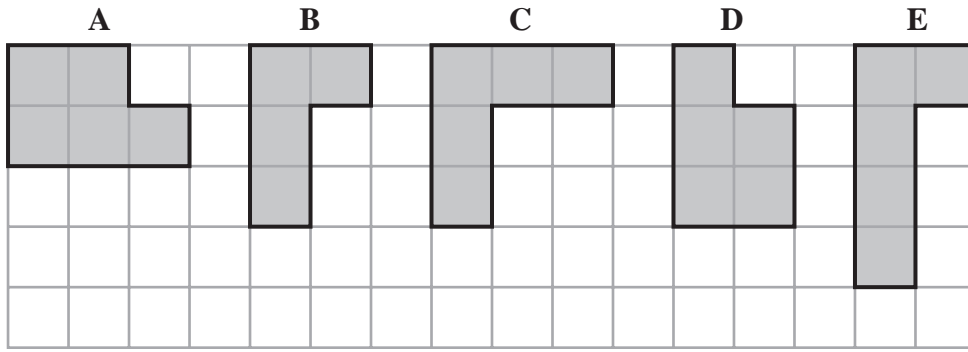
- (c) Show this information on the pictogram.

(1)

(Total for Question 2 is 4 marks)



3 The diagram shows five shaded shapes on a grid of squares.

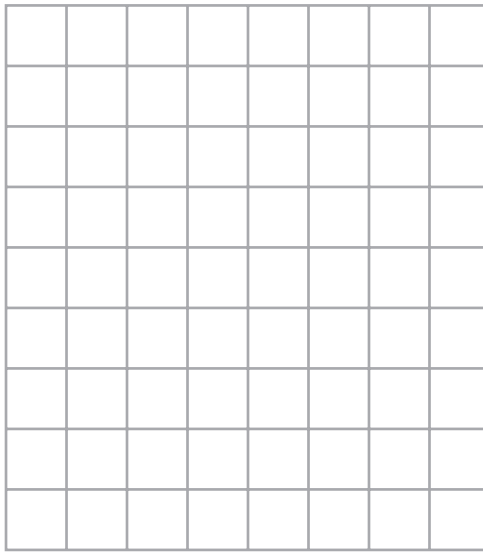


Two of the shapes are congruent.

(a) Write down the letters of these shapes.

..... and ..... (1)

(b) On the square grid below, draw a shape that is similar to but is **not** congruent to shape B.



(2)

All of the shapes on the grid have 6 sides.

(c) Write down the mathematical name for a shape that has 6 sides.

..... (1)

(Total for Question 3 is 4 marks)



4 There are 12 beads in a bag.

6 of the beads are green

4 of the beads are blue

2 of the beads are pink

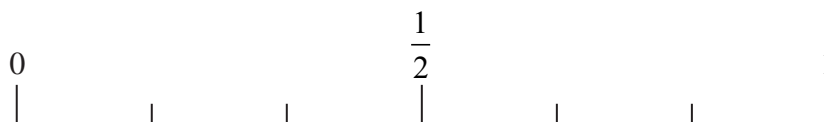
Peter takes at random a bead from the bag.

(a) Circle the word in the list below that best describes the likelihood that the bead is green.

impossible      unlikely      evens      likely      certain

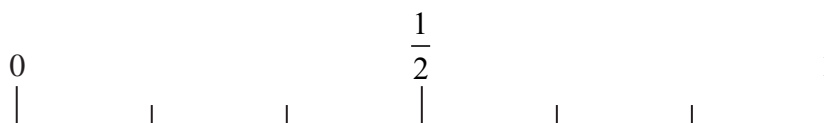
(1)

(b) On the probability scale, mark with a cross (×) the probability that the bead is orange.



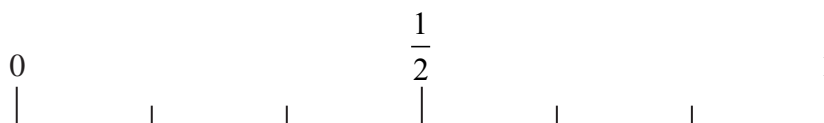
(1)

(c) On the probability scale, mark with a cross (×) the probability that the bead is blue.



(1)

(d) On the probability scale, mark with a cross (×) the probability that the bead is green or pink.



(1)

(Total for Question 4 is 4 marks)



5 (a) Simplify  $w + w + w + w - w$

.....  
(1)

(b) Simplify  $4 \times a \times 2$

.....  
(1)

(c) Simplify  $f \times f \times f \times f \times f$

.....  
(1)

(d) Simplify  $4c + 4h + 5c - 6h$

.....  
(2)

(e) Factorise  $10d + 15$

.....  
(1)

(f) Make  $t$  the subject of  $e = 7t + g$

.....  
(2)

(Total for Question 5 is 8 marks)



Turn over

- 6 Candles cost £3.05 each.  
Theo has £30 to spend on candles.  
He buys as many candles as he can for £30  
Work out how much change Theo should get.

£.....

(Total for Question 6 is 3 marks)

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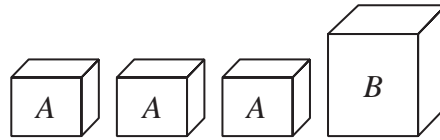


Diagram **NOT**  
accurately drawn

The diagram shows four parcels.

The total weight of the four parcels is 8.3 kg.

The weight of the parcel labelled *B* is 3.2 kg.

Each of the three parcels labelled *A* have the same weight.

(a) Work out the weight of each of the parcels labelled *A*.

..... kg  
(2)

Here are another three parcels.

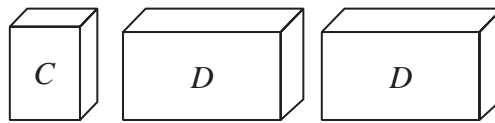


Diagram **NOT**  
accurately drawn

The total weight of the three parcels is 9.45 kg.

Each of the two parcels labelled *D* have the same weight.

The weight of each parcel labelled *D* is  $3 \times$  the weight of the parcel labelled *C*.

(b) Work out the weight of the parcel labelled *C*.

..... kg  
(2)

(Total for Question 7 is 4 marks)



- 8 There are 150 people at an international conference. These 150 people were each asked to say what their main method of transport was to get to the conference. The two-way table shows some information about these people and their answers.

|       | bus | train | plane | total |
|-------|-----|-------|-------|-------|
| men   |     | 15    |       | 80    |
| women | 17  |       |       |       |
| total | 29  | 43    |       | 150   |

- (a) Complete the two-way table.

(3)

One of the men from these 150 people is selected at random.

- (b) Write down the probability that this man's main method of transport was train.

.....  
(1)

(Total for Question 8 is 4 marks)



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9 A box is to be filled with cartons.

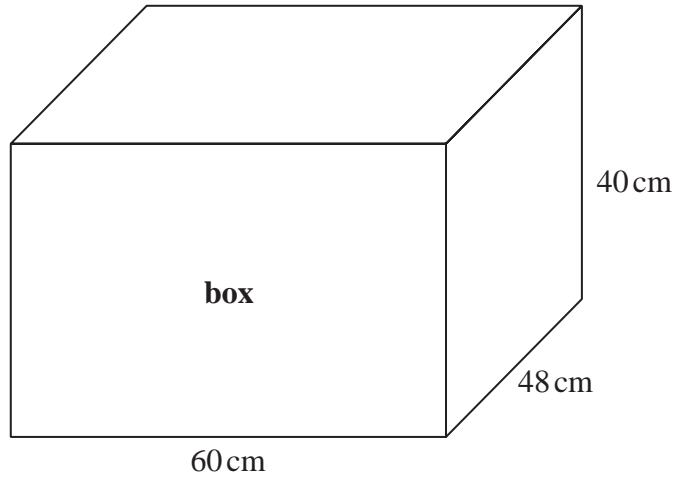
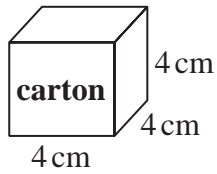


Diagram NOT accurately drawn

Each carton is a cube that measures 4 cm by 4 cm by 4 cm.  
The box is a cuboid that measures 60 cm by 48 cm by 40 cm.

Work out the number of cartons that can completely fill the box.

.....  
(Total for Question 9 is 3 marks)



Turn over



P 6 2 6 5 1 A 0 1 1 2 4

10 The diagram shows a square and an isosceles triangle.

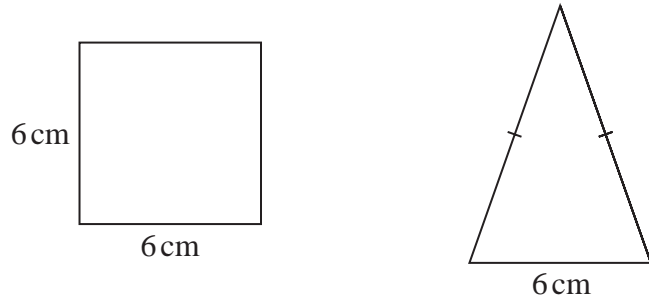


Diagram NOT accurately drawn

The square has sides of length 6 cm.  
The base of the isosceles triangle is 6 cm.

The perimeter of the square is equal to the perimeter of the isosceles triangle.

The shaded shape is made by putting three of the isosceles triangles around the square as shown in the diagram below.

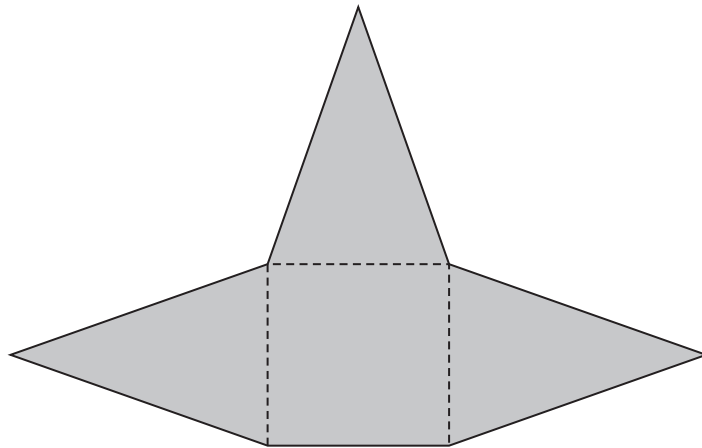


Diagram NOT accurately drawn

Work out the perimeter of the shaded shape.  
Show your working clearly.

..... cm

(Total for Question 10 is 4 marks)



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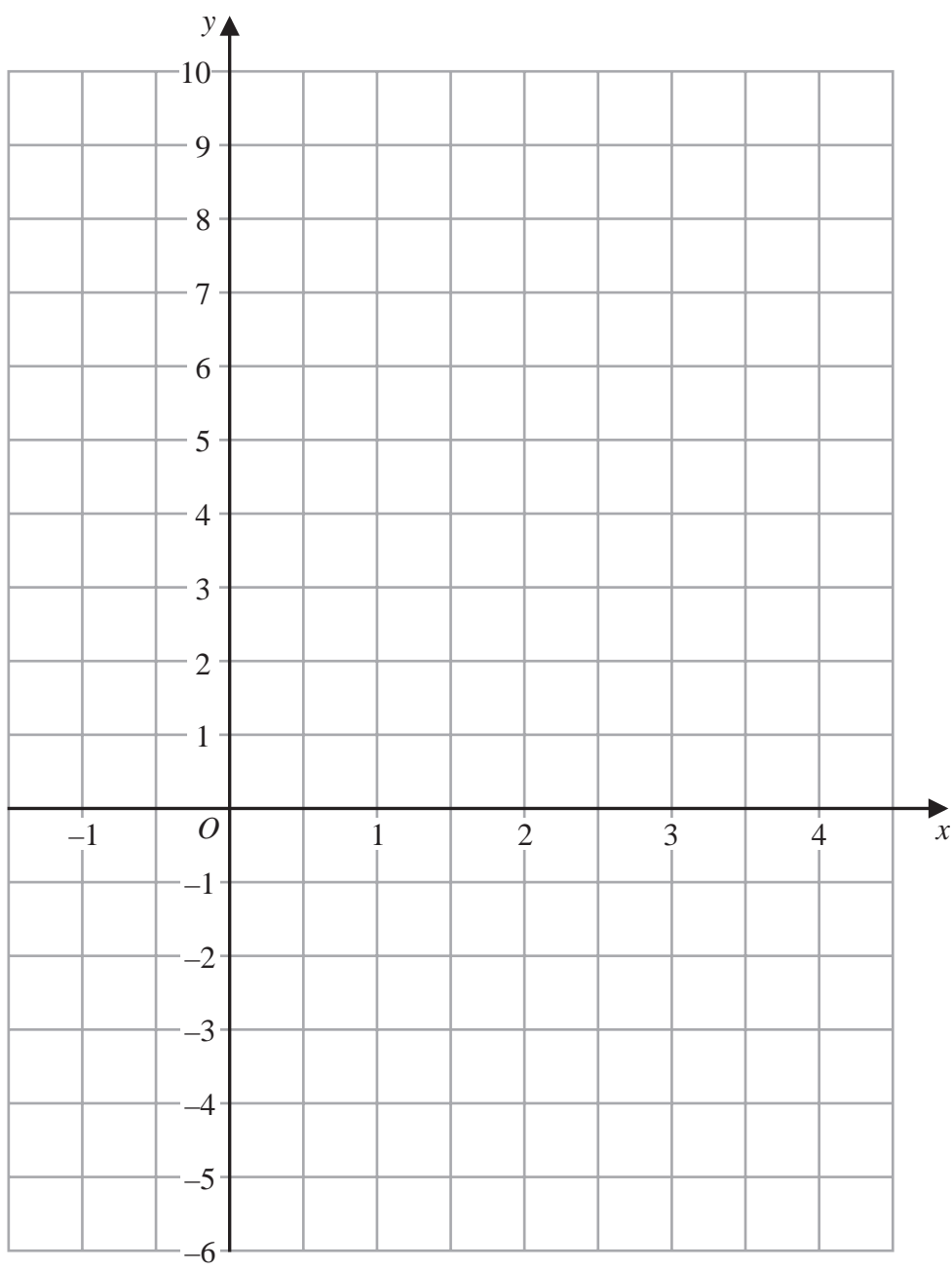
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11 On the grid, draw the graph of  $y = 3x - 2$  for values of  $x$  from  $-1$  to  $4$



(Total for Question 11 is 3 marks)

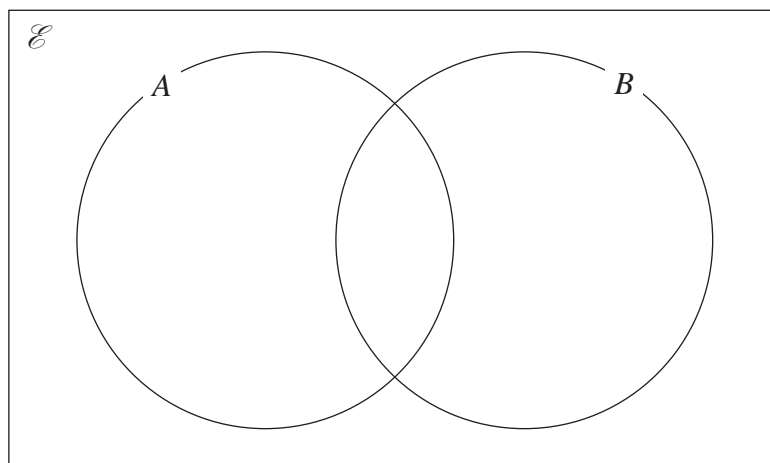


12  $\mathcal{E} = \{\text{whole numbers from 1 to 15}\}$

$A = \{\text{even numbers}\}$

$B = \{3, 6, 9, 12, 15\}$

Complete the Venn diagram for the sets  $\mathcal{E}$ ,  $A$  and  $B$ .



(Total for Question 12 is 3 marks)

13 Find which is larger

32% of 450

or

$\frac{2}{5}$  of 375

You must show all your working.

(Total for Question 13 is 3 marks)



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14 Find the lowest common multiple (LCM) of 20 and 35

.....  
(Total for Question 14 is 2 marks)

15

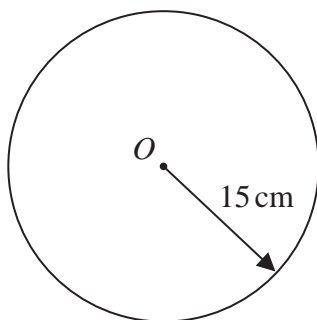


Diagram NOT accurately drawn

The diagram shows a circle, centre  $O$ , with radius 15 cm.

Work out the area of the circle.

Give your answer in  $\text{cm}^2$  correct to the nearest whole number.

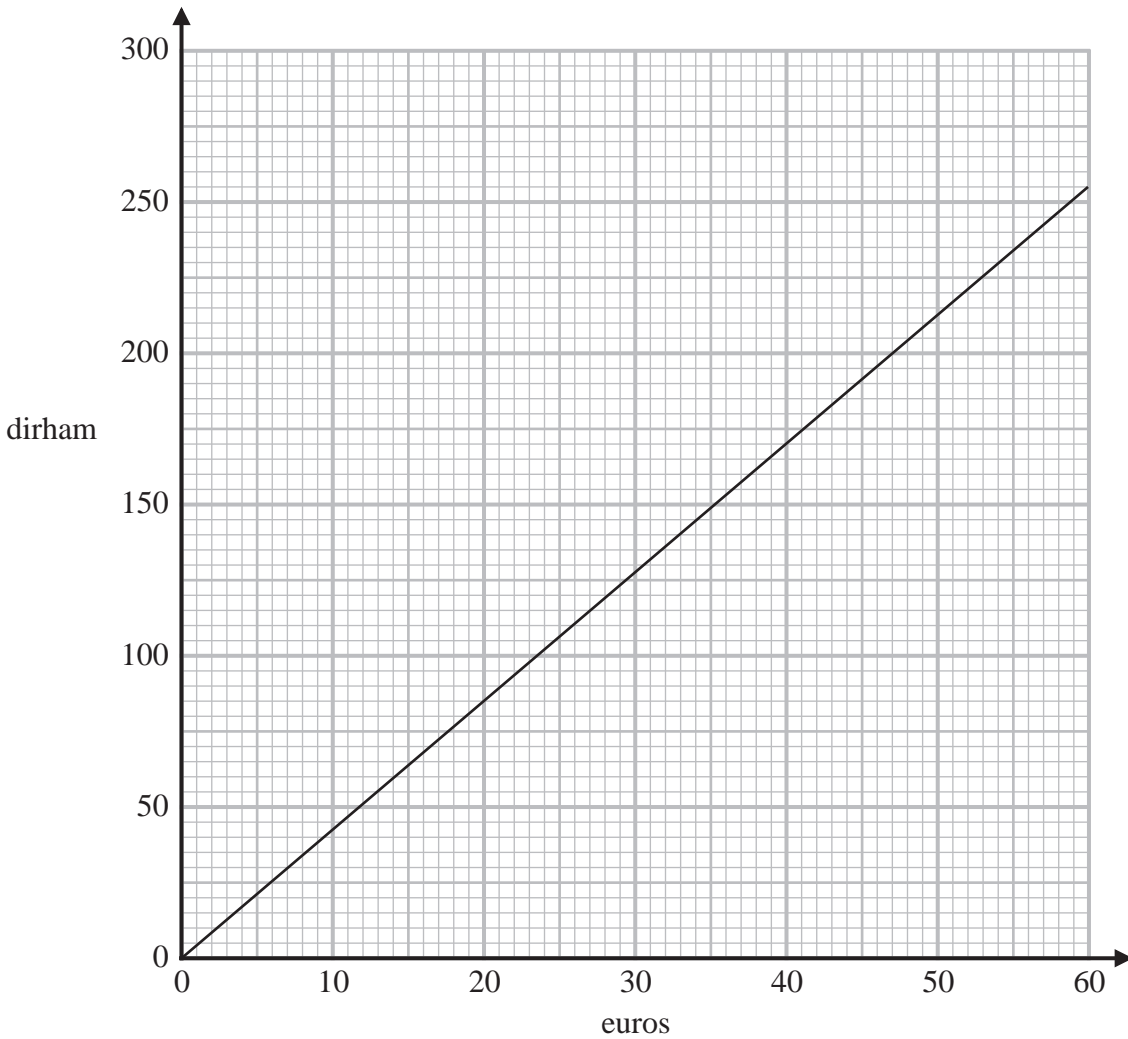
.....  $\text{cm}^2$

(Total for Question 15 is 2 marks)



Turn over

16 The graph below can be used to change between euros and dirham.



(a) Use the graph to change 200 dirham to euros.

..... euros  
(1)

The price of a jacket is 90 euros in France and 400 dirham in the United Arab Emirates.

(b) In which of these countries is the jacket cheaper?  
You must show your working.

..... (2)

(Total for Question 16 is 3 marks)

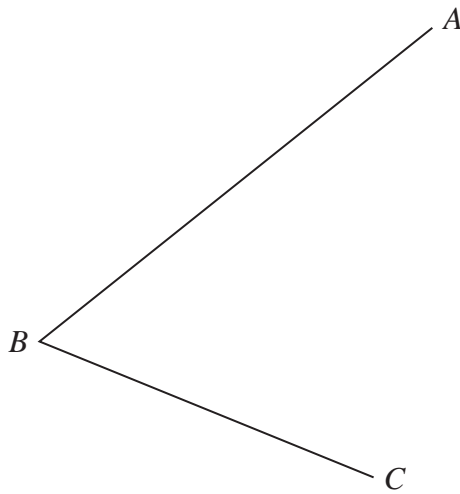




17 Show that  $3\frac{3}{4} \times \frac{7}{9} = 2\frac{11}{12}$

(Total for Question 17 is 3 marks)

- 18 Using ruler and compasses only, construct the bisector of angle  $ABC$ .  
You must show all your construction lines.



(Total for Question 18 is 2 marks)



19 (a) Simplify  $h^7 \times h^2$

.....  
(1)

$$G = c^2 - 4c$$

(b) Find the value of  $G$  when  $c = -5$

$G =$  .....  
(2)

(c) Solve  $\frac{5x - 3}{4} = 2x + 3$

Show clear algebraic working.

$x =$  .....  
(3)

(Total for Question 19 is 6 marks)



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20 The table gives information about the length of time, in minutes, that each of 60 students took to travel to school on Monday.

| Length of time<br>( $t$ minutes) | Frequency |
|----------------------------------|-----------|
| $0 < t \leq 10$                  | 4         |
| $10 < t \leq 20$                 | 10        |
| $20 < t \leq 30$                 | 15        |
| $30 < t \leq 40$                 | 25        |
| $40 < t \leq 50$                 | 6         |

Work out an estimate for the mean length of time taken by these 60 students to travel to school on Monday.

Give your answer correct to one decimal place.

..... minutes

(Total for Question 20 is 4 marks)



**21** In 2017, the population of a village was 7500  
In 2019, the population of the village was 8265

(a) Work out the percentage increase in the population of the village from 2017 to 2019

..... %  
(3)

In a sale, normal prices are reduced by 30%  
The sale price of a T-shirt was 31.50 euros.

(b) Work out the normal price of the T-shirt.

..... euros  
(3)

**(Total for Question 21 is 6 marks)**

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- 22** Point  $A$  has coordinates  $(-3, 11)$   
Point  $B$  has coordinates  $(47, b)$   
The midpoint of  $AB$  has coordinates  $(a, -19)$   
Find the value of  $a$  and the value of  $b$ .

$a =$  .....

$b =$  .....

**(Total for Question 22 is 2 marks)**

- 23** Pedro drove from Toulouse to Montpellier in 2 hours 42 minutes.  
He drove at an average speed of 90 km/hour.  
Janine drove from Toulouse to Montpellier along the same route as Pedro.  
The journey took her 3 hours.  
Work out Janine's average speed for the journey.

..... km/hour

**(Total for Question 23 is 4 marks)**



P 6 2 6 5 1 A 0 2 1 2 4



Turn over

- 24 Harold bought an antique clock for £1200  
The clock increased in value by 8% per year.

Find the value of the clock exactly 3 years after Harold bought the clock.  
Give your answer correct to the nearest £.

£.....

(Total for Question 24 is 3 marks)

- 25 A box is put on a horizontal table.

The face of the box in contact with the table is a square of side 1.5 metres.  
The pressure on the table due to the box is 34.8 newtons/m<sup>2</sup>

Work out the force exerted by the box on the table.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

..... newtons

(Total for Question 25 is 3 marks)



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26 Alex makes 80 cakes to sell.

He makes chocolate cakes, lemon cakes and fruit cakes where

$$\begin{array}{l} \text{number of} \\ \text{chocolate cakes} \end{array} : \begin{array}{l} \text{number of} \\ \text{lemon cakes} \end{array} : \begin{array}{l} \text{number of} \\ \text{fruit cakes} \end{array} = 3 : 2 : 5$$

Alex sells

all of the chocolate cakes

$\frac{3}{4}$  of the lemon cakes

$\frac{7}{8}$  of the fruit cakes

The profit he makes on each cake he sells is shown in the table.

| Type of cake | Profit per cake he sells |
|--------------|--------------------------|
| chocolate    | £2.00                    |
| lemon        | £1.70                    |
| fruit        | £2.40                    |

Work out the total profit that Alex makes from the cakes he sells.

£.....

(Total for Question 26 is 5 marks)



Turn over



27 The diagram shows a regular octagon  $ABCDEFGH$ .

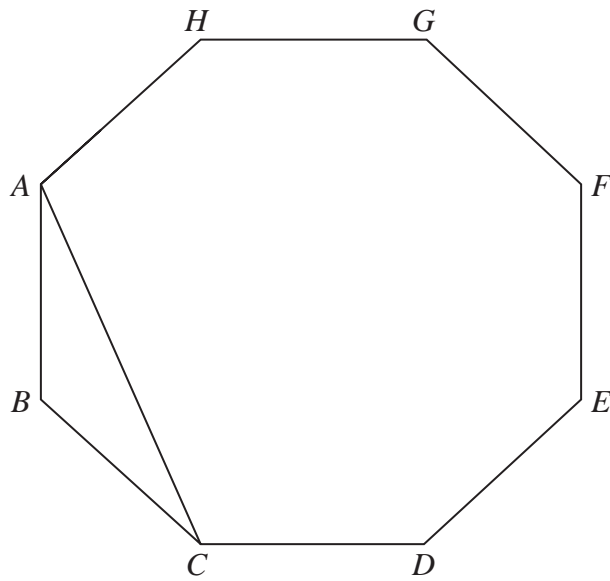


Diagram **NOT** accurately drawn

Work out the size of angle  $HAC$ .

.....  
(Total for Question 27 is 3 marks)

**TOTAL FOR PAPER IS 100 MARKS**

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