Pearson Edexcel International GCSE

Wednesday 8 November 2023

Morning (Time: 2 hours) | **Paper reference** **4MA1/1F**

Mathematics A
PAPER 1F
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.
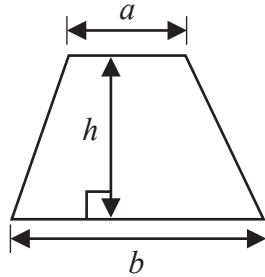
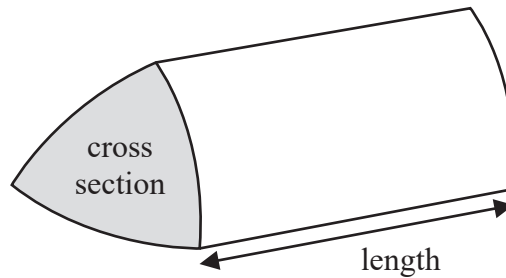*Turn over* ▶

Pearson

International GCSE Mathematics

Formulae sheet – Foundation Tier

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

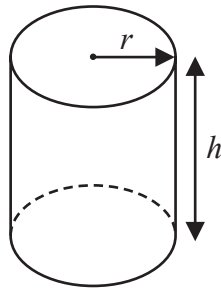**Volume of prism** = area of cross section × length

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

Curved surface area of cylinder $= 2\pi rh$

P 7 3 4 6 3 A 0 2 2 8

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Here is a list of numbers.

$$9 \quad 11 \quad 25 \quad 27 \quad 33 \quad 40$$

(a) From the numbers in the list, write down

(i) an even number

....

(1)

(ii) a cube number

....

(1)

Here are the temperatures, in °C, in Paris at midnight for one week.

$$-3 \quad -7 \quad -2 \quad -6 \quad -9 \quad -1 \quad -5$$

(b) Write down the lowest temperature.

....°C

(1)

(c) Find the square root of 441

....

(1)

Hassan says,

"the sum of two prime numbers is always even"

(d) Give an example to show that Hassan is **not** correct.

....

(1)

(Total for Question 1 is 5 marks)

P 7 3 4 6 3 A 0 3 2 8

2 The bar chart shows information about the number of international students who studied in each of five countries in 2019
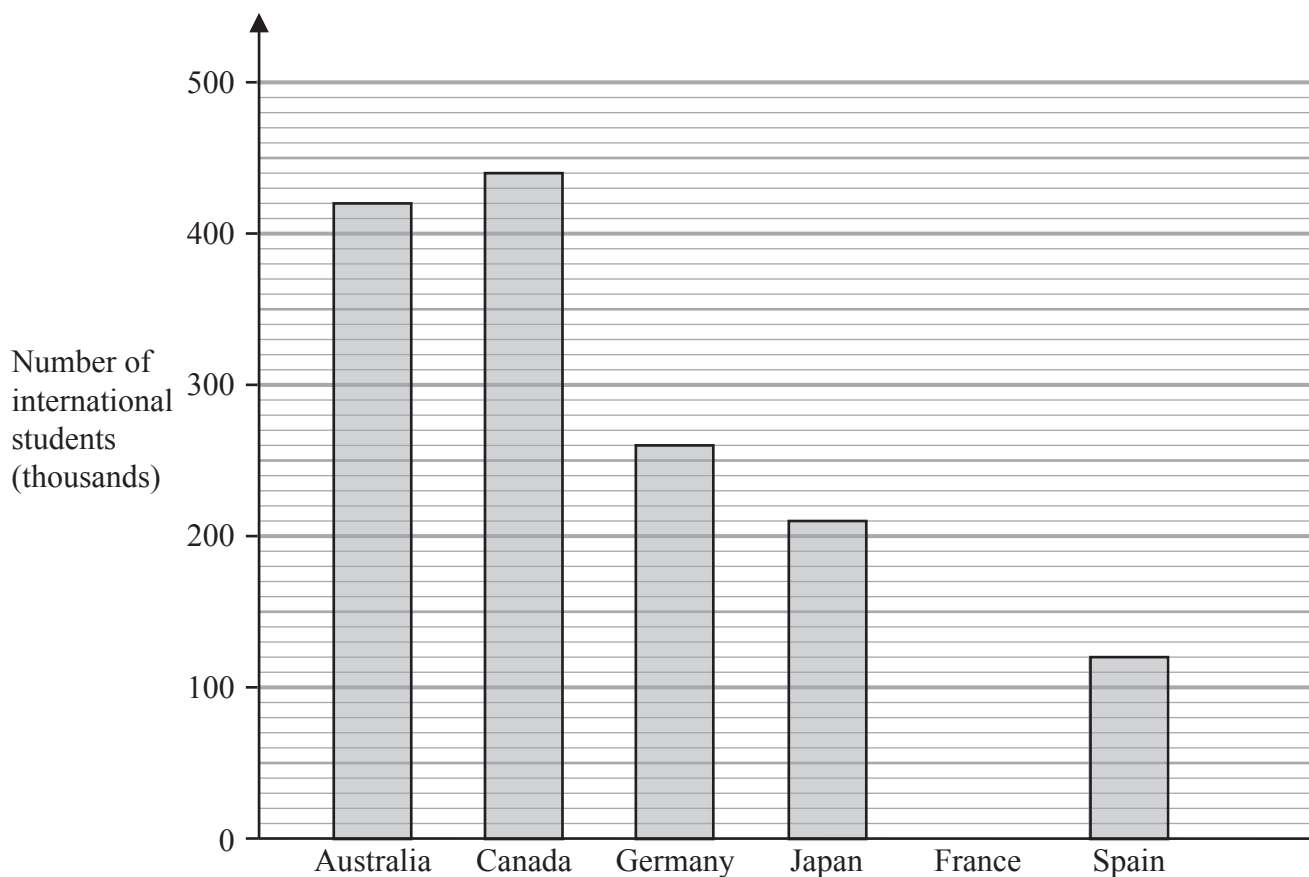
(a) In which of these five countries did the greatest number of international students study?

....

(1)

(b) Write down the number of international students who studied in Australia.

.... thousand

(1)

The number of international students who studied in Japan was more than the number of international students who studied in Spain.

(c) How many more?

.... thousand

(1)

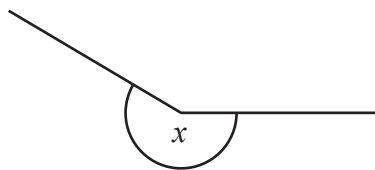In 2019, the number of international students who studied in France was 340 thousand.

(d) Draw a bar on the bar chart to show this information.

(1)

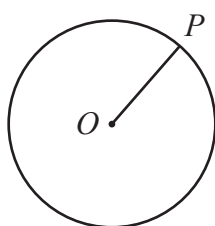**(Total for Question 2 is 4 marks)**

3 (a)

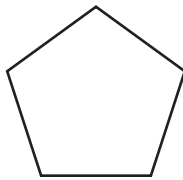Write down the mathematical name of the angle marked *x*

....

(1)

P is a point on a circle with centre *O*

(b) Write down the mathematical name of the line *OP*

....

(1)

Here is a polygon.

(c) Write down the mathematical name of this polygon.

....

(1)

Here is a solid prism.
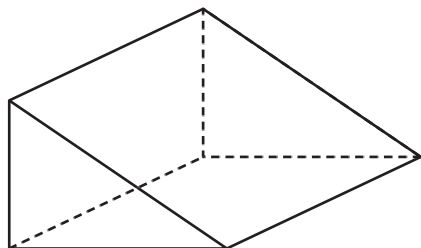
(d) Write down the number of edges of this solid prism.

....

(1)

(Total for Question 3 is 4 marks)

4 The diagram shows three points, *A*, *B* and *C*, marked on a grid.
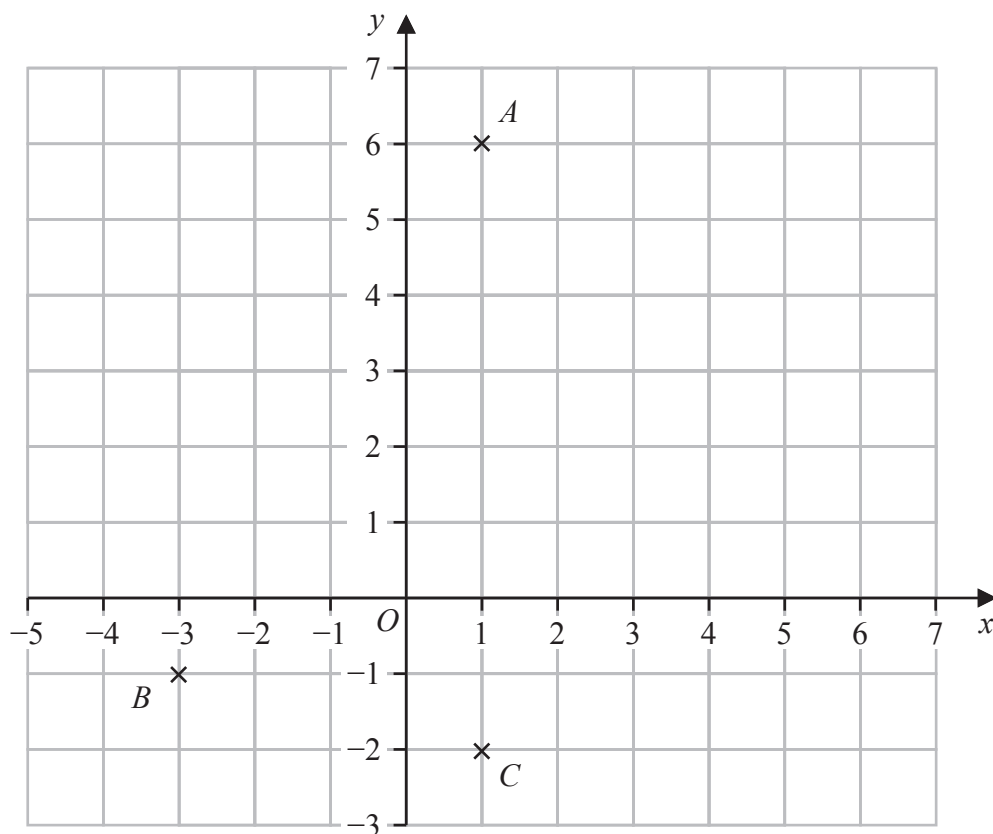
(a) Write down the coordinates of point *A*

(............................ , ...)

(1)

(b) Write down the coordinates of point *B*

(............................ , ...)

(1)

M is the midpoint of the line *AC*

(c) On the grid, mark with a cross (×) the point *M*
   Label the point *M*

(1)

The point *D* is such that the shape *ABCD* is a kite.

(d) On the grid, mark with a cross (×) the point *D*
   Label the point *D*

(1)

(e) How many lines of symmetry has kite *ABCD*?

....

(1)

(Total for Question 4 is 5 marks)

5 Here is a shape made of squares.
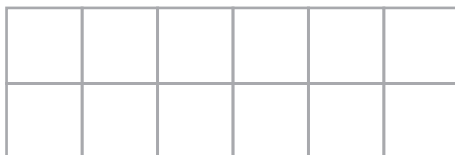
(a) Shade $\frac{2}{3}$ of the shape.

(1)

(b) Write $\frac{3}{10}$ as a percentage.

....%

(1)

(c) Write $\frac{48}{150}$ as a fraction in its simplest form.

....

(1)

(d) Write $\frac{46}{7}$ as a mixed number.

....

(1)

(Total for Question 5 is 4 marks)

6 Akbar goes to a restaurant with his friends.
They have a total of 1000 dirhams to spend on food.

They order

      2 dishes of chicken makhani at 145.50 dirhams each
      3 dishes of vegetable korma at 110 dirhams each
      some naans at 30 dirhams each

They order as many naans as they can.

They pay with a 1000 dirham note.

Work out how much change they should receive.

.... dirhams

(Total for Question 6 is 4 marks)

7 (a) Simplify $9d \times 5c$

....
(1)

(b) Simplify $7p + 5n - 9p + 3n$

....
(2)

$T = 8e - 6f$

(c) Work out the value of T when $e = 9$ and $f = 5$

$T =$ ....
(2)

(d) Solve $5m - 6 = 17$

$m =$ ....
(2)

(Total for Question 7 is 7 marks)

8 There are four teams in a cricket competition.

The teams are

| Australia (*A*) | England (*E*) | Pakistan (*P*) | West Indies (*W*) |

Each team will play every other team once.

Write down all the matches that will take place.

....

....

....

(Total for Question 8 is 2 marks)
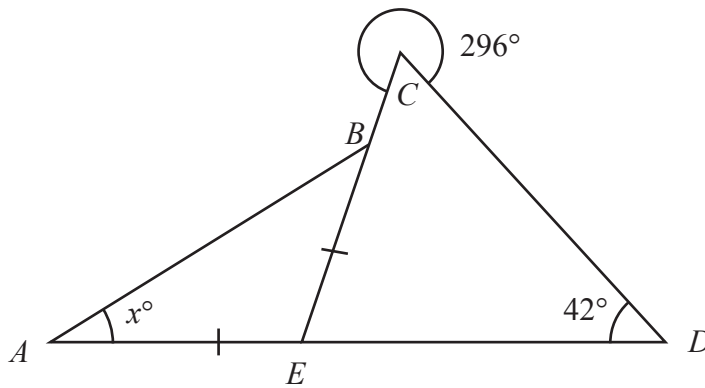
9 The diagram shows two triangles *ABE* and *ECD*

Diagram **NOT**
accurately drawn

Triangle *ABE* is isosceles with *AE* = *EB*
AED and *EBC* are straight lines.

Angle *CDE* = 42°
The reflex angle *ECD* = 296°
Angle *BAE* = *x*°

Work out the value of *x*

x = ...

(Total for Question 9 is 4 marks)

10 The table gives information about the number of rewards gained by each of 50 students last term.

Number of rewards	Frequency
0	3
1	9
2	15
3	18
4	4
5	1

(a) Write down the mode of the number of rewards.

....

(1)

(b) Work out the mean number of rewards.

....

(3)

One of these students is chosen at random.

(c) Find the probability that this student gained more than 2 rewards.

....

(2)

(Total for Question 10 is 6 marks)

11 A rental company has 360 cars and some vans.

The ratio of the number of cars to the number of vans is 3 : 5

$\frac{4}{9}$ of the cars are electric.
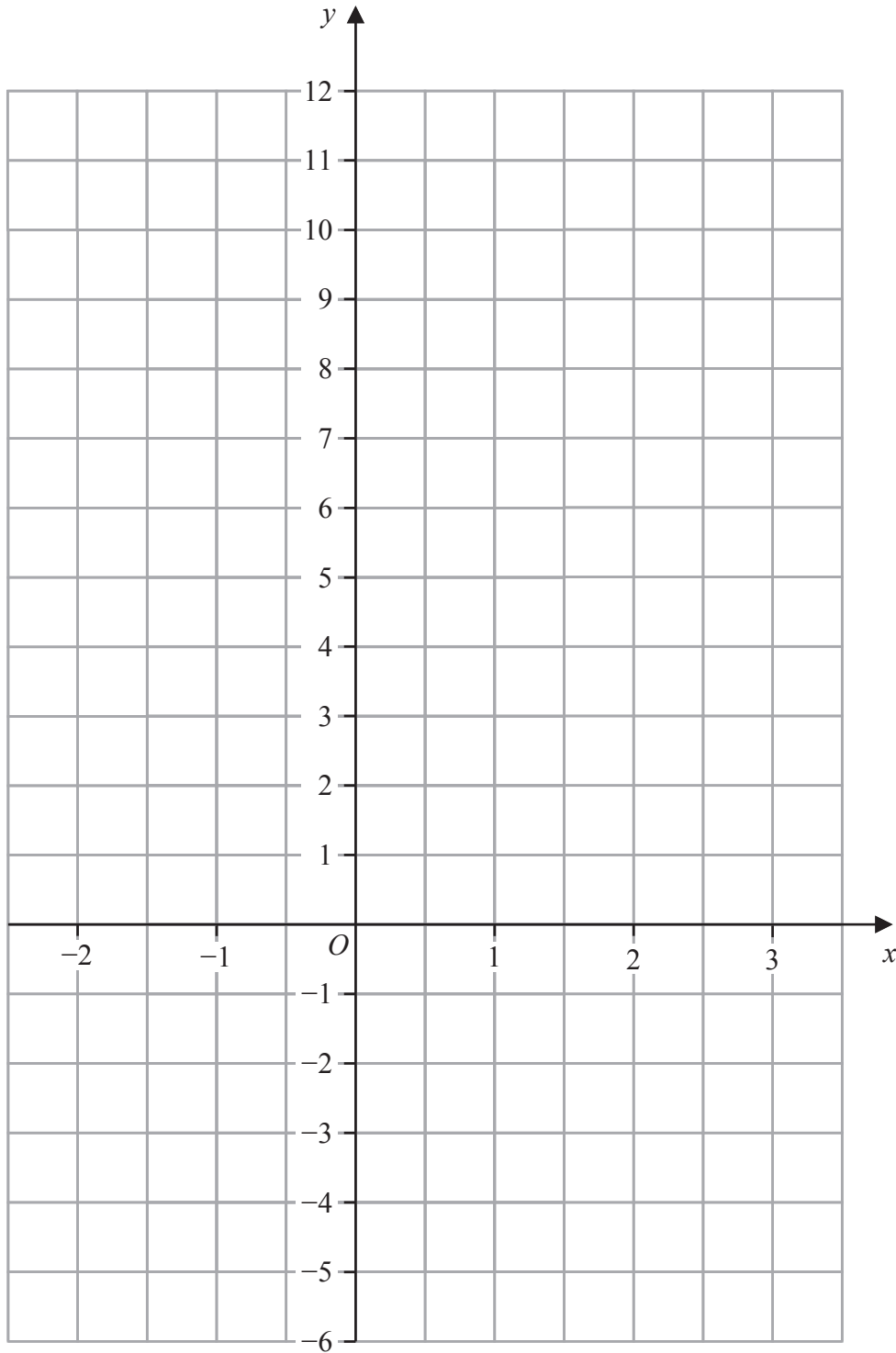
36% of the vans are electric.

The company has more electric vans than electric cars.

Work out how many more.
Show your working clearly.

....

(Total for Question 11 is 5 marks)

12 On the grid below, draw the graph of $y = 5 - 3x$ for values of x from -2 to 3

(Total for Question 12 is 3 marks)

P 7 3 4 6 3 A 0 1 4 2 8

13 A wheel on a tractor has a diameter of 160 cm.

The tractor travels 1750 metres.

Work out the number of complete turns made by the wheel.
Show your working clearly.

....

(Total for Question 13 is 4 marks)

14 Here is an accurate scale drawing showing the positions of a hotel and a museum.
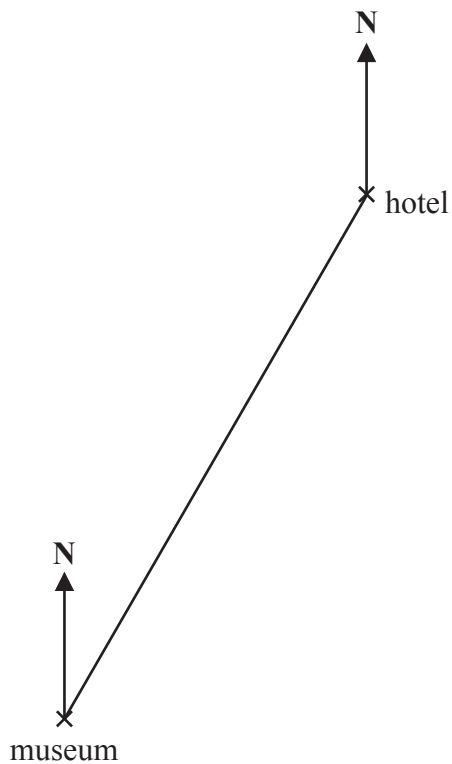
Scale: 1 cm represents 4.5 km

(a) Find, by measuring, the bearing of the hotel from the museum.

.... °

(1)

(b) Work out the real distance between the hotel and the museum.

.... km

(2)

(Total for Question 14 is 3 marks)

15 Here is a Venn diagram.
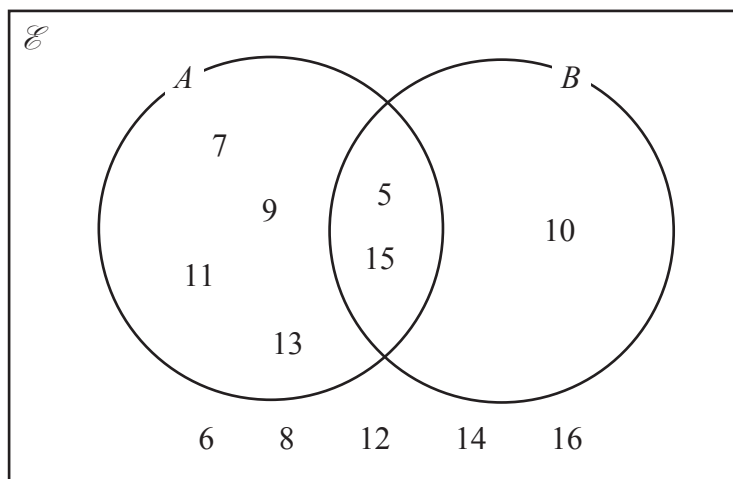
List the members of the set

(a) *A*

....

(1)

(b) $A \cap B$

....

(1)

(c) $(A \cup B)'$

....

(1)

(Total for Question 15 is 3 marks)

16 (a) Factorise fully $12pq - 18p$

....
(2)

There are 56 metal bars in a box.
Each metal bar is gold or silver or zinc.

   y metal bars are gold.
   $(3y + 7)$ metal bars are silver.
   $(2y - 5)$ metal bars are zinc.

(b) Work out the number of metal bars that are zinc.
    Show clear algebraic working.

....
(4)

(Total for Question 16 is 6 marks)

17 Joshua buys a car for $12 500

He sells the car to Nina.

Nina pays

- a deposit of $1500
- followed by 36 monthly payments of $450

Work out Joshua's percentage profit.

....%

(Total for Question 17 is 4 marks)

18 A biased spinner has three sections each of a different colour.

The table shows the probability that, when the spinner is spun once, it will land on blue or on orange or on white.

Colour	blue	orange	white
Probability	0.58	$2x$	x

(a) Work out the value of x

$x = $ ....

(2)

The spinner is spun 250 times.

(b) Work out an estimate for the number of times the spinner will land on blue.

....

(2)

(Total for Question 18 is 4 marks)

19 The diagram shows a shaded shape made from three identical semicircles, *X*, *Y* and *Z*
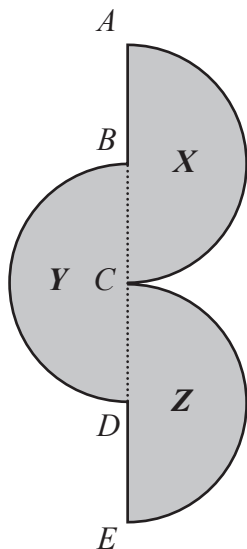

Diagram **NOT** accurately drawn

ABCDE is a straight line.

AC is the diameter of semicircle *X* and *B* is the centre of semicircle *X*
BD is the diameter of semicircle *Y* and *C* is the centre of semicircle *Y*
CE is the diameter of semicircle *Z* and *D* is the centre of semicircle *Z*

AC = *BD* = *CE* = 20 cm

Work out the perimeter of the shaded shape.
Give your answer correct to the nearest whole number.

.... cm

(Total for Question 19 is 3 marks)

20 Juan wants to buy a ticket to fly from Madrid to Berlin.

He finds two different types of ticket he can buy in a sale, ticket **A** and ticket **B**

ticket **A**
$\frac{1}{6}$ off normal price

ticket **B**
20% off normal price

The sale price of ticket **A** is 140 euros.
The sale price of ticket **B** is 136 euros.

Work out the difference between the normal price of ticket **A** and the normal price of ticket **B**

.... euros

(Total for Question 20 is 4 marks)

P73463A02228

21 $A = 5^3 \times 7^3 \times 11^6$ and $B = 5^6 \times 7^2 \times 11^4$

Find the highest common factor (HCF) of A and B
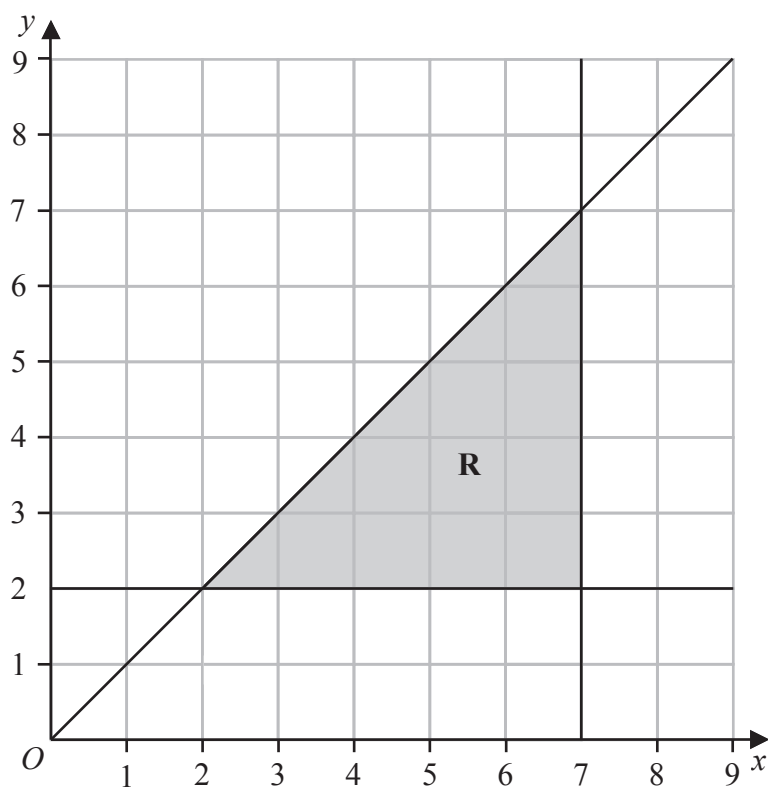Give your answer as a product of powers of its prime factors.

....

(Total for Question 21 is 2 marks)

22 (a) Solve the inequality $8x - 4 \geqslant 3x - 10$

....

The region **R**, shown shaded in the diagram, is bounded by three straight lines.

(b) Write down the three inequalities that define the region **R**

....

....

....

(3)

(Total for Question 22 is 5 marks)

23 (a) Write 5.87×10^{-4} as an ordinary number.

....
(1)

(b) Write 84 000 000 in standard form.

....
(1)

The number of neurons in a human brain is 8.5×10^{10}
The number of neurons in a monkey brain is 1.47×10^{9}

The number of neurons in a human brain is $K \times$ the number of neurons in a monkey brain.

(c) Work out the value of K
Give your answer correct to one decimal place.

$K = $ ....
(2)

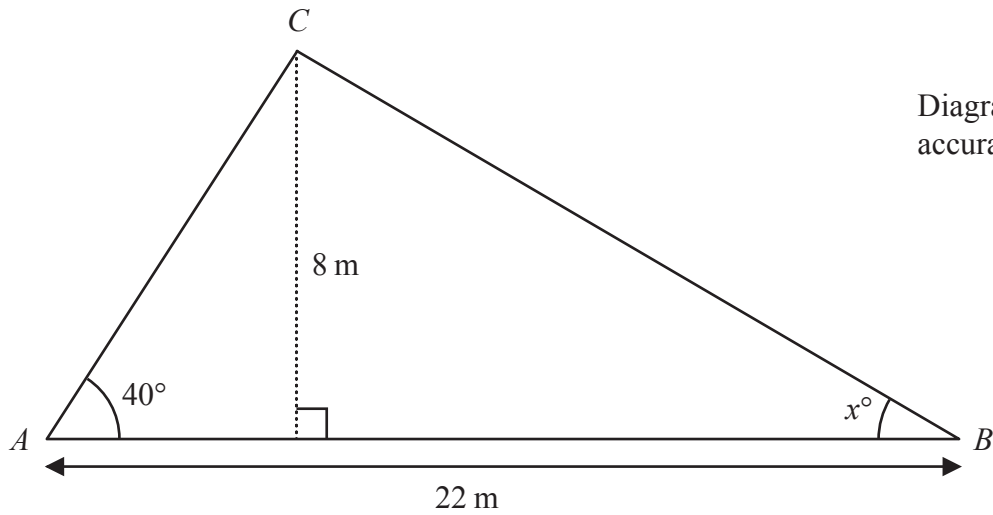**(Total for Question 23 is 4 marks)**

24 Here is triangle *ABC*

Diagram **NOT** accurately drawn

Work out the value of *x*
Give your answer correct to one decimal place.
Show your working clearly.

x = ...

(Total for Question 24 is 5 marks)

P7 3 4 6 3 A 0 2 6 2 8

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P7 3 4 6 3 A 0 2 7 2 8

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