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Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE

Time 2 hours

Paper reference **4MA1/2FR**

Mathematics A

PAPER 2FR

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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J:1/1/1/1/

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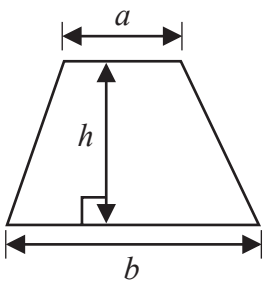
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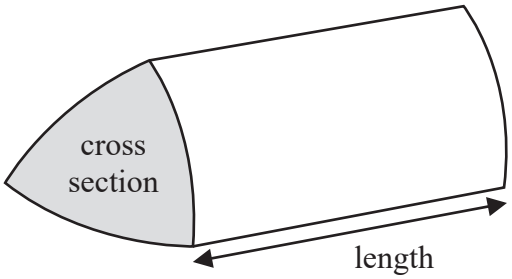
International GCSE Mathematics

Formulae sheet – Foundation Tier

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

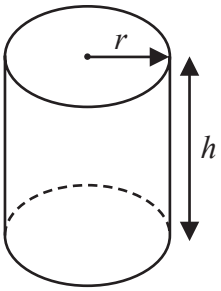


Volume of prism = area of cross section × length



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

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



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Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write these numbers in order of size.
Start with the smallest number.

171 490 84 105 233

.....

(1)

(b) Write in figures the number five thousand, one hundred and two.

.....

(1)

(c) Write down the value of the 3 in the number 7439

.....

(1)

(d) Write the number 651 correct to the nearest hundred.

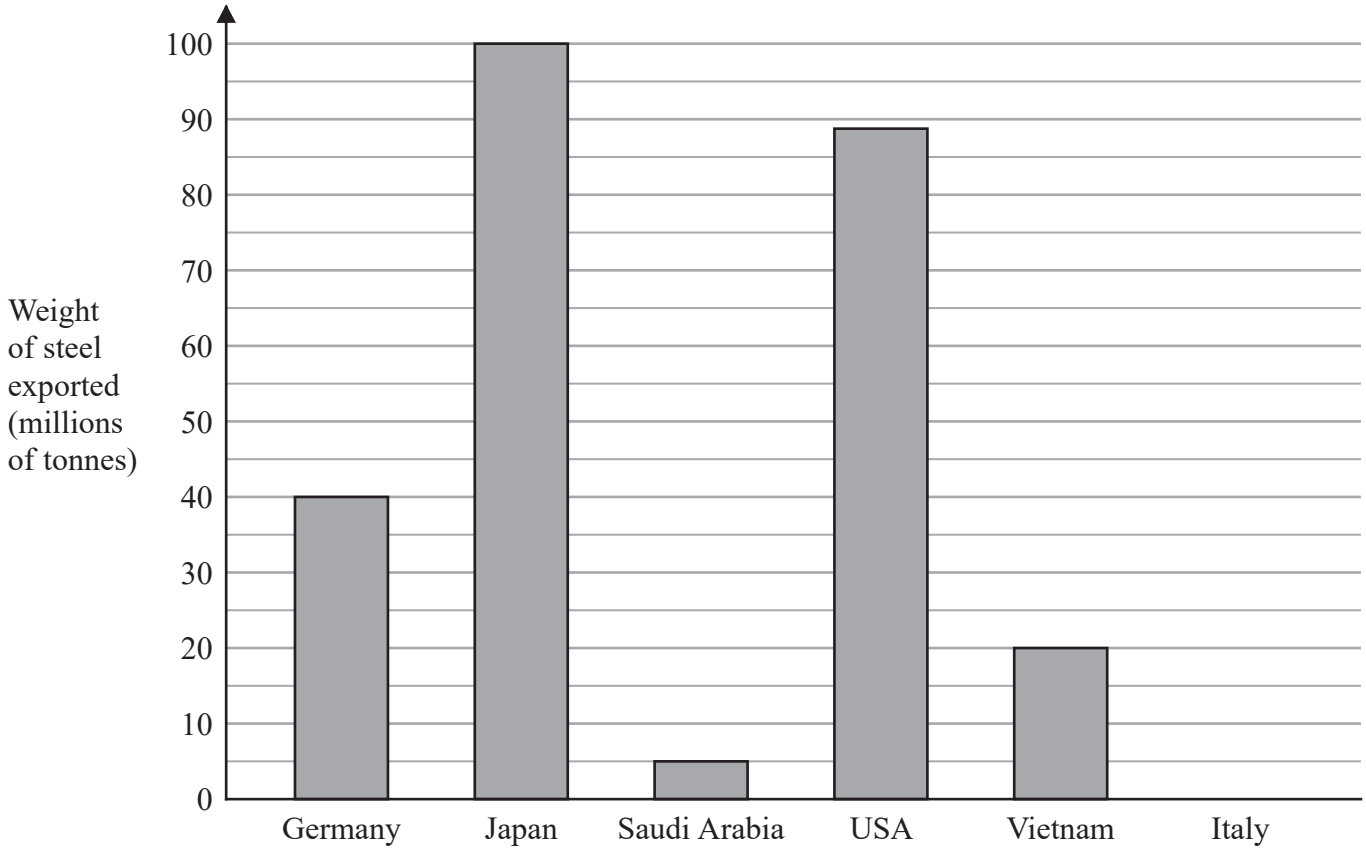
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(1)

(Total for Question 1 is 4 marks)

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2 The bar chart shows information about the weight of steel, in millions of tonnes, exported by each of five countries in 2019



Using the information in the bar chart,

(a) write down the weight of steel exported by Germany,

..... million tonnes
(1)

(b) write down the country that exported 88 million tonnes of steel,

.....
(1)

(c) work out the difference between the weight of steel exported by Japan and the weight of steel exported by Saudi Arabia.

..... million tonnes
(1)

Italy exported 25 million tonnes of steel in 2019

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

(1)

(Total for Question 2 is 4 marks)

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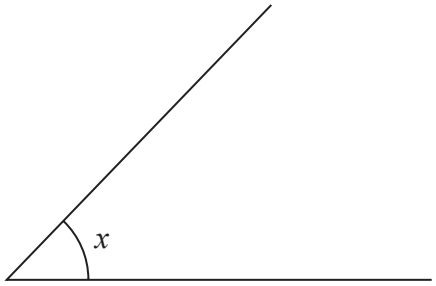
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3 (a) Write down the mathematical name for an 8-sided polygon.

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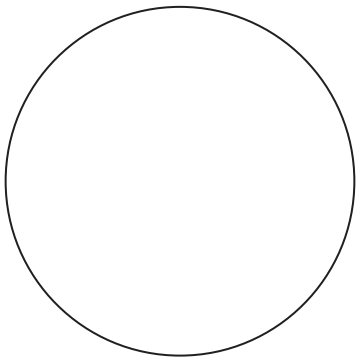
(1)



(b) What type of angle is the angle marked x?

.....

(1)



(c) On the diagram above, draw a chord of the circle.

(1)

(d) Change 3.6 metres into centimetres.

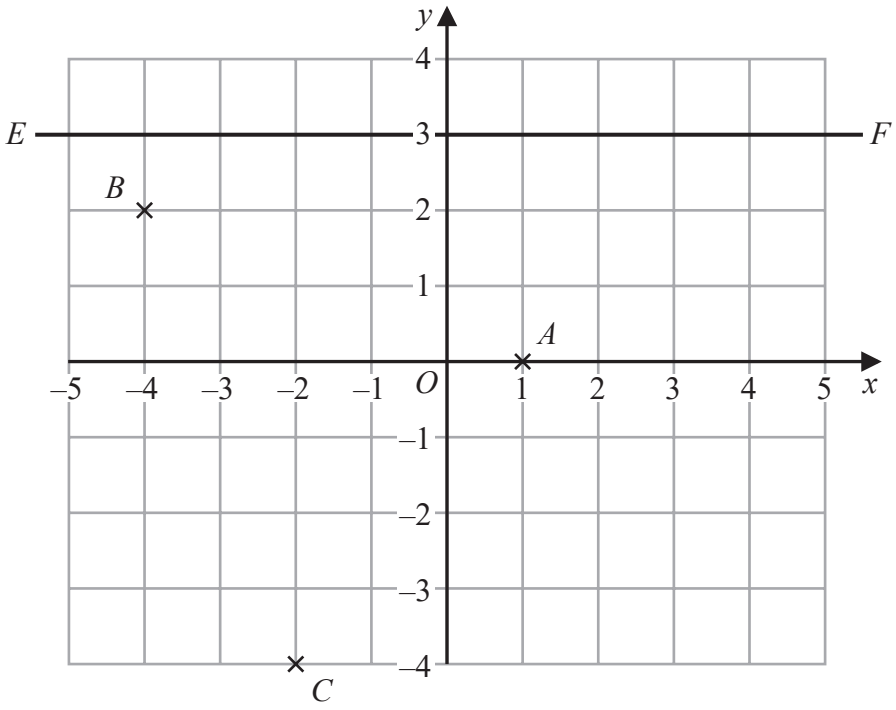
..... cm

(1)

(Total for Question 3 is 4 marks)

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4 The diagram shows three points, A, B and C, and a line EF on a grid.



(a) Write down the coordinates of the point A

(..... , ...)

(1)

The coordinates of the point D are $(3, -2)$

(b) On the grid, mark with a cross (×) the position of D
Label the cross D

(1)

(c) Find the coordinates of the midpoint of BC

(..... , ...)

(2)

(d) Write down the equation of the line EF

.....

(1)

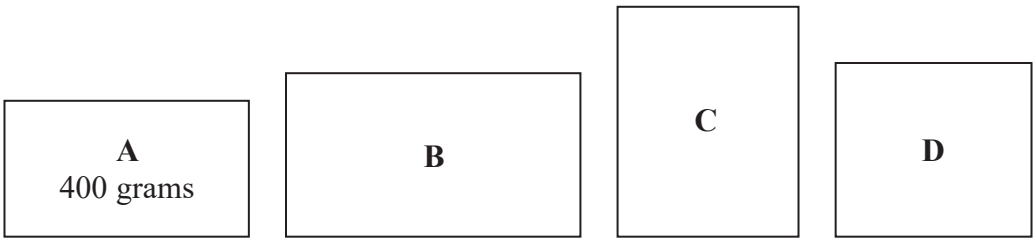
(Total for Question 4 is 5 marks)

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5 Pat has 4 parcels **A**, **B**, **C** and **D**



The weight of parcel **A** is 400 grams.

The weight of parcel **B** is 350 grams more than the weight of parcel **A**
The weight of parcel **C** is twice the weight of parcel **A**

The total weight of the 4 parcels is 2.5 kilograms.

Work out the weight, in grams, of parcel **D**

..... grams

(Total for Question 5 is 4 marks)

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6 Here are the first five terms of a number sequence.

4 10 16 22 28

(a) (i) Write down the next term of the sequence.

.....

(1)

(ii) Explain how you worked out your answer.

.....

(1)

(b) Work out the 13th term of the sequence.

.....

(1)

(c) Explain why 467 cannot be a number in the sequence.

.....

.....

(1)

(Total for Question 6 is 4 marks)

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7 In a field, there are 60 sheep and 24 cows.

(a) Find the ratio of the number of sheep to the number of cows.
Give your ratio in its simplest form.

.....

(2)

In a barn, there are only white ducks and brown ducks.
In the barn, the ratio

number of white ducks : number of brown ducks = 3 : 7

(b) What fraction of the ducks in the barn are white?

.....

(1)

Giles and Sarah share some bales of hay in the ratio 11 : 4

Sarah receives 20 bales of hay.

(c) Work out how many bales of hay are shared in total.

.....

(3)

(Total for Question 7 is 6 marks)

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8 Linford is going to take part in an athletics competition.
He can choose one event from List **A** and one event from List **B**

List A	List B
Discus (*D*) Hammer (*H*) Javelin (*J*) Shot Put (*S*)	Long Jump (*L*) Pole Vault (*P*) Relay (*R*)

Write down all the possible combinations Linford can choose.

.....

.....

.....

(Total for Question 8 is 2 marks)

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9 (a) Write the time 8 30 pm using the 24-hour clock.

.....

(1)

Ella started watching television at 10 50 am.

Ella watched

a comedy programme lasting 45 minutes
a sports programme lasting 1 hour 10 minutes
a history programme

There were no breaks and no advertisements between the programmes.
Ella finished watching television at 2 20 pm.

(b) How long did the history programme last?
Give your answer in minutes.

..... minutes

(3)

(Total for Question 9 is 4 marks)

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10 Hermann changed £500 into euros.
The exchange rate was £1 = 1.18 euros.

(a) Work out how much money, in euros, Hermann received.

..... euros

(2)

Anita changed $350 into pounds (£)
The exchange rate was £1 = $1.40

(b) Work out how much money, in pounds (£), Anita received.

£.....

(2)

(Total for Question 10 is 4 marks)

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11 Asif has 200 beads.

Asif gives $\frac{1}{4}$ of the 200 beads to Bernadette.

Asif gives $\frac{2}{5}$ of the 200 beads to Claudio.

Asif gives 43 beads to Derek.

What fraction of the 200 beads does Asif have left?

.....

(Total for Question 11 is 4 marks)

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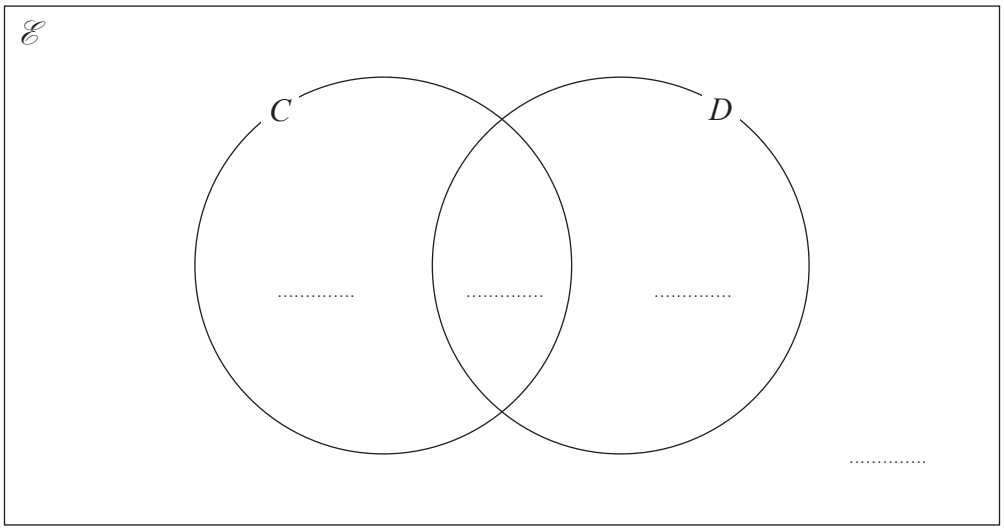
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12 30 children were asked whether they have a cat (C) or a dog (D)

Of the 30 children

5 have both a cat and a dog
13 have a dog
11 have **only** a cat

(a) Complete the Venn diagram.



(3)

One of the children is picked at random.

(b) Find the probability that this child

(i) has a dog,

.....

(1)

(ii) does not have a dog and does not have a cat.

.....

(1)

(Total for Question 12 is 5 marks)

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13 The diagram shows the plan of a floor.

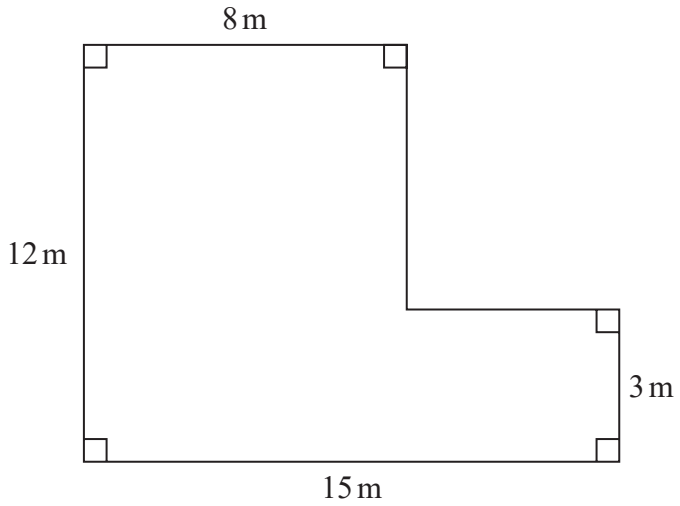


Diagram **NOT** accurately drawn

Indira is going to paint the floor.
She needs to buy enough tins of paint to cover the floor with one coat of paint.

Each tin of paint covers an area of 7 m^2
Each tin of paint costs £23.90

Indira buys the least possible number of tins of paint.

Work out the total cost of the tins of paint that Indira buys.
Show your working clearly.

£.....

(Total for Question 13 is 5 marks)

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14 (a) Expand $x(10 - x)$

.....

(1)

(b) Factorise $6y + 27$

.....

(1)

(c) Make m the subject of the formula $h = \frac{m}{2} + 4$

.....

(2)

(d) Solve $7g + 3 = 2g - 5$
Show clear algebraic working.

$g =$ .....

(3)

(Total for Question 14 is 7 marks)

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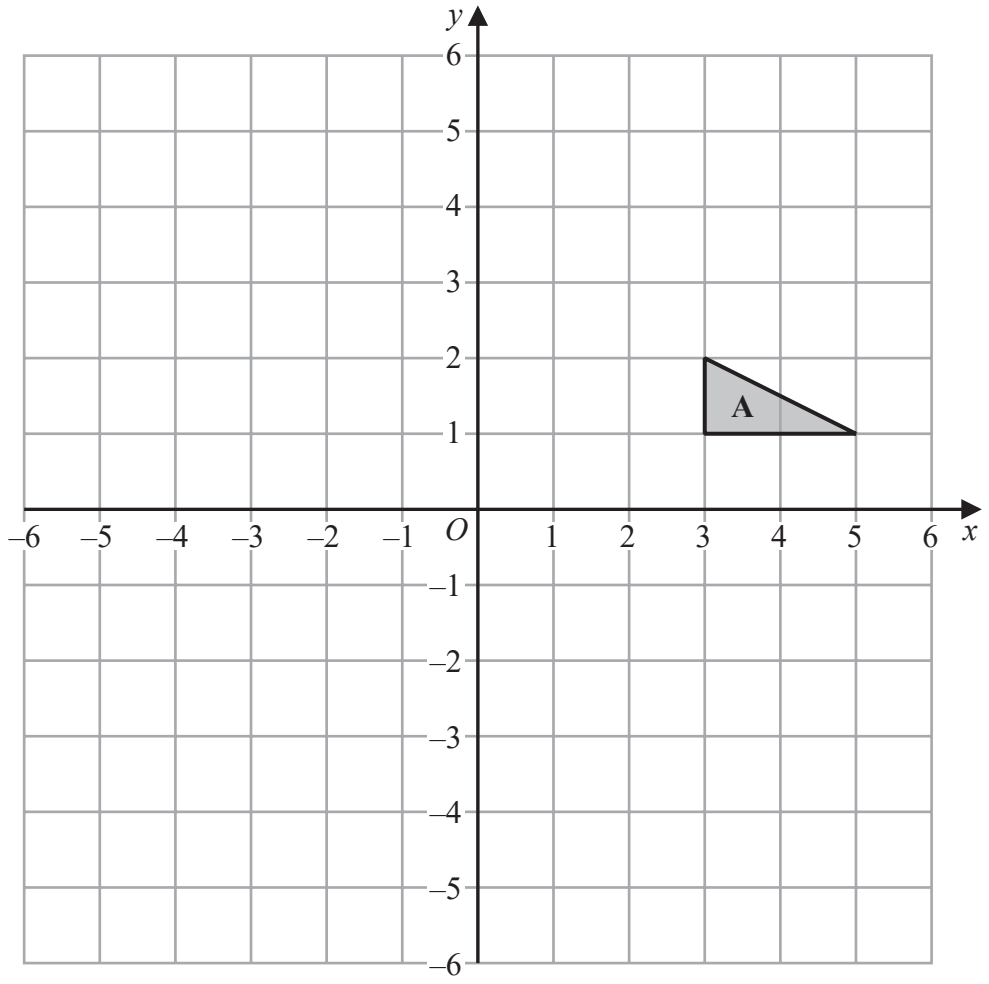
15 Show that $4\frac{2}{3} \div 1\frac{5}{6} = 2\frac{6}{11}$

(Total for Question 15 is 3 marks)

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16



(a) On the grid, rotate triangle **A** 180° about (1, –1)
Label the new triangle **B**

(2)

(b) On the grid, translate triangle **A** by the vector $\begin{pmatrix} -7 \\ 3 \end{pmatrix}$

Label the new triangle **C**

(1)

(Total for Question 16 is 3 marks)

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17 $-8 < 2y \leqslant 2$

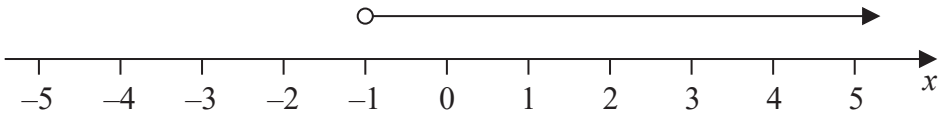
y is an integer.

(a) Find all the possible values of y

.....

(2)

(b) Write down the inequality shown on the number line.

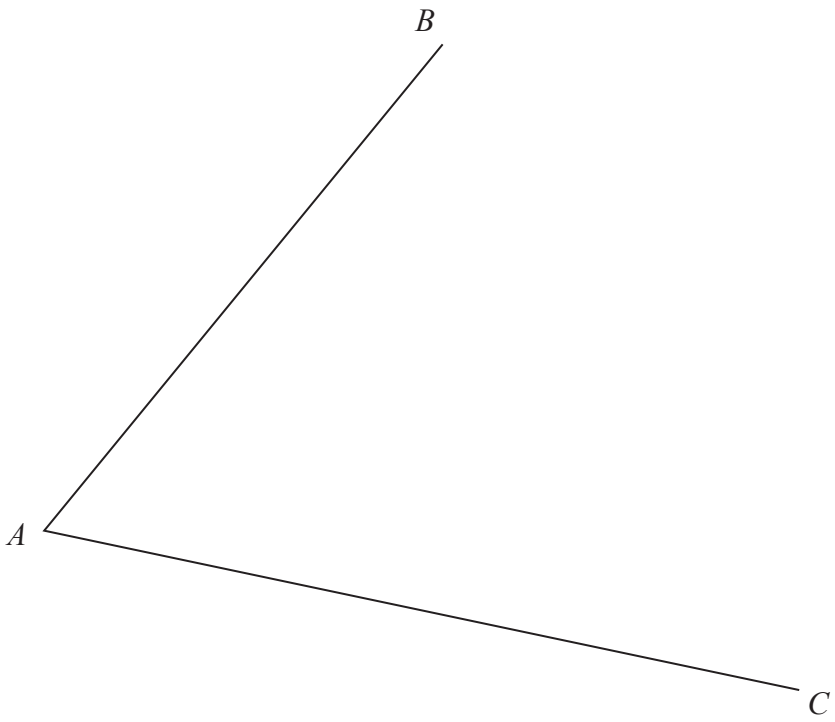


.....

(1)

(Total for Question 17 is 3 marks)

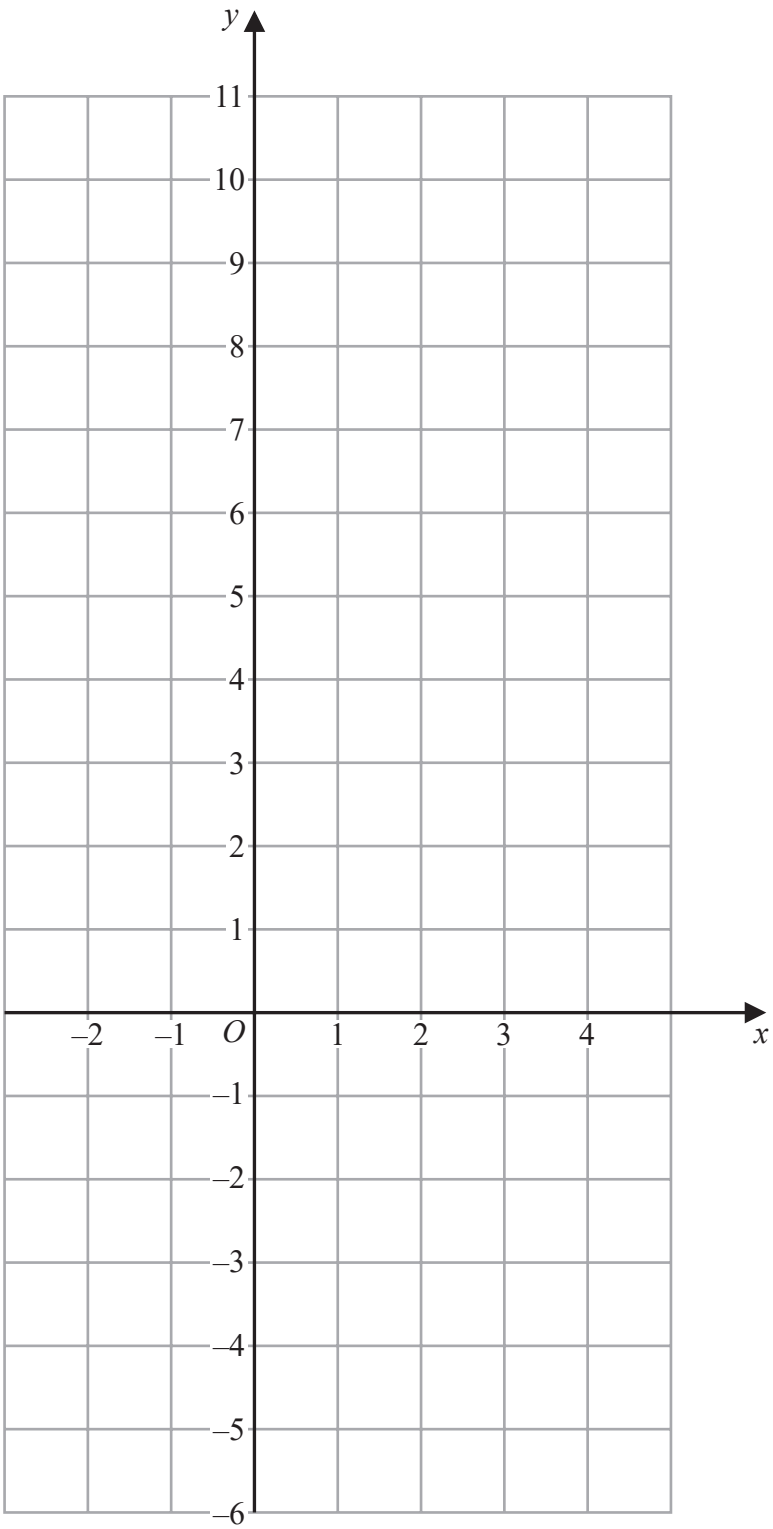
18 Using ruler and compasses only, construct the bisector of angle BAC
You must show all your construction lines.



(Total for Question 18 is 2 marks)

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19 On the grid, draw the graph of $5x + 2y = 10$ for values of x from –2 to 4



(Total for Question 19 is 3 marks)

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20 In a bag, there are only red counters, blue counters, green counters and yellow counters.

The total number of counters in the bag is 80

In the bag

the number of red counters is $x + 7$
the number of blue counters is $x - 11$
the number of green counters is $3x$

Jude takes at random a counter from the bag.

The probability that he takes a red counter is $\frac{1}{4}$

Work out the probability that Jude takes a yellow counter.

.....

(Total for Question 20 is 4 marks)

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21 (a) Find the highest common factor (HCF) of 200 and 420

.....

(2)

$A = 2^3 \times 3 \times 5 \times 7^2$
$B = 2 \times 3^2 \times 7$
$C = 3 \times 5^2 \times 11$

(b) Find the lowest common multiple (LCM) of A, B and C
Write your answer as a product of powers of prime factors.

.....

(2)

(Total for Question 21 is 4 marks)

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22 60 students sat a Mathematics exam.

The mean mark for the 32 students in Class A was 55
The mean mark for the 28 students in Class B was 52

Find the mean mark for all 60 students.

.....

(Total for Question 22 is 3 marks)

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23 Teresa invests $2000 for 3 years in a savings account.
She gets 4% each year compound interest.

(a) How much money will Teresa have in her savings account at the end of 3 years?
Give your answer correct to the nearest dollar.

$.....

(3)

Sam invested $\$T$
The value of his investment decreased by 9% each year.

At the end of the first year, the value of Sam's investment was $1365

(b) Work out the value of T

.....

(3)

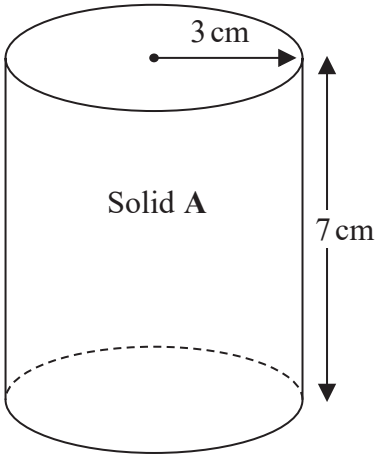
(Total for Question 23 is 6 marks)

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24 The diagram shows two solids, **A** and **B**, made from two different metals.



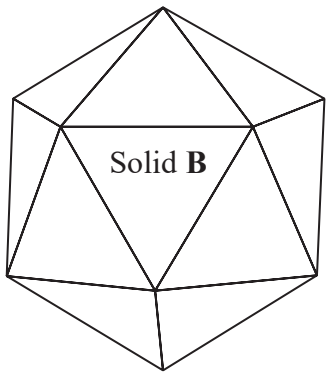


Diagram **NOT** accurately drawn

Solid **A** is in the shape of a cylinder with radius 3 cm and height 7 cm
Solid **A** has a mass of 2000 g

Solid **B** has a mass of 3375 g
Solid **B** has a volume of 450 cm^3

All of the metal from Solid **A** and Solid **B** is melted down to make a uniform Solid **C**

Given that there is no change to mass or volume during this process

work out the density of Solid **C**
Give your answer correct to one decimal place.

..... g/cm^3

(Total for Question 24 is 3 marks)

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25

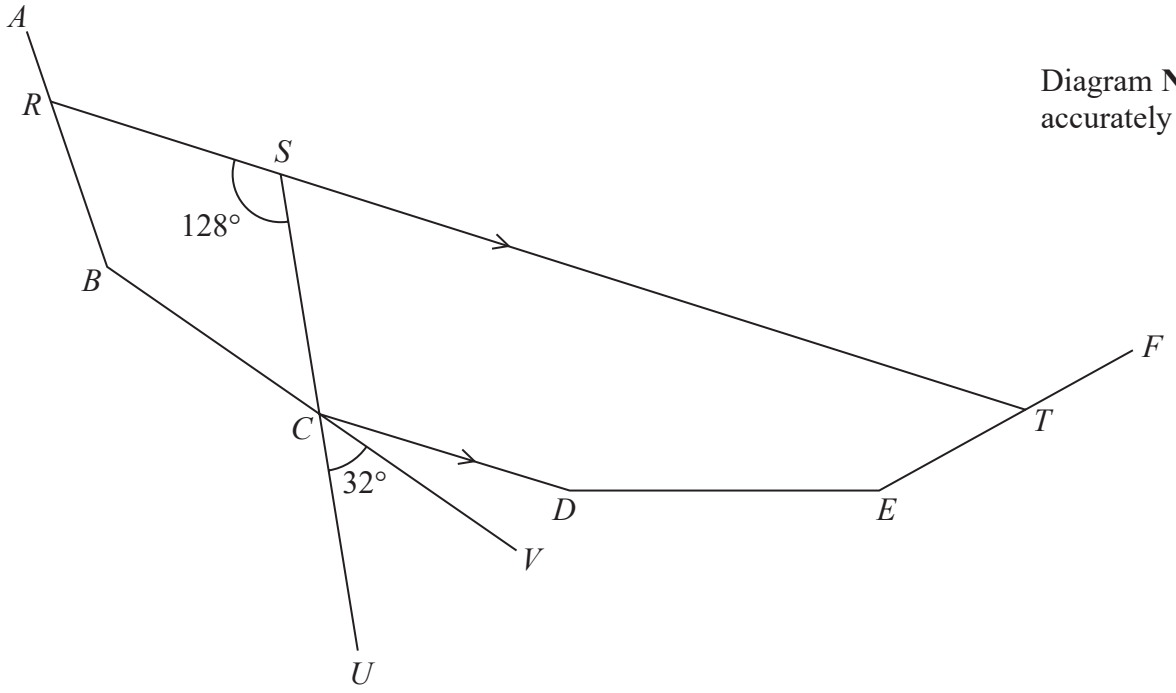


Diagram **NOT** accurately drawn

AB, *BC*, *CD*, *DE* and *EF* are five sides of a regular polygon.

RST, *SCU* and *BCV* are straight lines.
RST is parallel to *CD*
Angle *RSC* = 128°
Angle *UCV* = 32°

Work out how many sides the polygon has.
Show your working clearly.

.....

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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