

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Monday 10 June 2024

Morning (Time: 1 hour 30 minutes)

Paper
reference

1MA1/3F

Mathematics

PAPER 3 (Calculator)

Foundation Tier



You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB or B pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write 23% as a fraction.

.....

(Total for Question 1 is 1 mark)

2 Change 800 centimetres to metres.

..... metres

(Total for Question 2 is 1 mark)

3 Write down the value of the 3 in the number 62837

.....

(Total for Question 3 is 1 mark)

4 Simplify $7a + a - 5a$

.....

(Total for Question 4 is 1 mark)

5 Write the following fractions in order of size.
Start with the smallest fraction.

$\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{4}$

.....

(Total for Question 5 is 1 mark)

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6 A map has a scale of 1 cm represents 4 km.

On the map, the distance from town A to town B is 8 cm.

(a) Work out the real distance, in km, from town A to town B.

..... km
(2)

The real length of a road is 10 km.

(b) Work out the length of the road on the map.
Give the units of your answer.

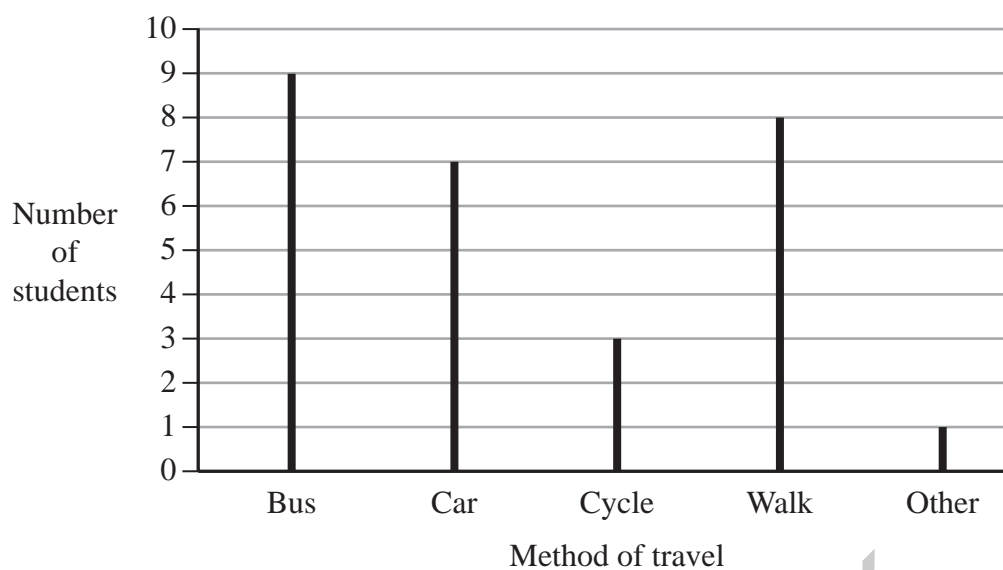
.....
(2)

(Total for Question 6 is 4 marks)



P 7 6 9 2 6 A 0 3 2 8

- 7 Julie asks some students how they travel to school.
The chart shows her results.



- (a) Write down which method of travel is the mode.

.....
(1)

More students walk to school than cycle to school.

- (b) How many more?

.....
(1)

(Total for Question 7 is 2 marks)



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8 Aisha was born in 1993

There was an election in the year of Aisha's 18th birthday.

There is an election every 5 years.

Will there be an election in 2030?

You must show how you get your answer.

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(Total for Question 8 is 3 marks)



9 Lucia is going on a skiing holiday.

The cost of ski hire is £26 per day.

The cost of a lift pass is £45 per day.

The cost of ski lessons is £23.50 per hour.

Lucia will pay for

ski hire for 5 days

a lift pass for 4 days

ski lessons for 8 hours.

Lucia has £500

Show that Lucia has enough money to pay for the total cost of ski hire, the lift pass and the ski lessons.

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(Total for Question 9 is 3 marks)

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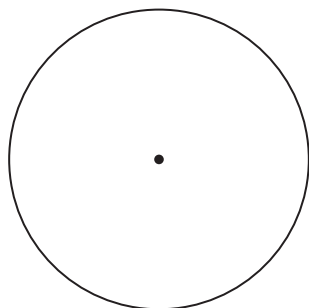


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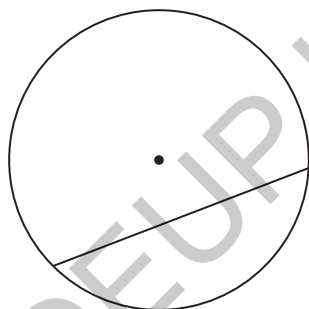
10 Here is a circle.



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

(1)

Here is another circle.



(b) Write down the mathematical name for the straight line inside this circle.

.....
(1)

(Total for Question 10 is 2 marks)



11 There are 8 episodes in a TV series.
Each episode lasts 45 minutes.

Work out the total time that the 8 episodes last.
Give your answer in hours.

..... hours

(Total for Question 11 is 2 marks)

12 Write down three prime numbers that are between 20 and 40

..... , ,

(Total for Question 12 is 2 marks)

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13 James asks students in Year 10 and Year 11 to name their favourite language from French or German or Spanish.

The two-way table shows information about his results.

	French	German	Spanish	Total
Year 10	33		34	
Year 11		45		113
Total			67	207

Complete the two-way table.

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(Total for Question 13 is 3 marks)

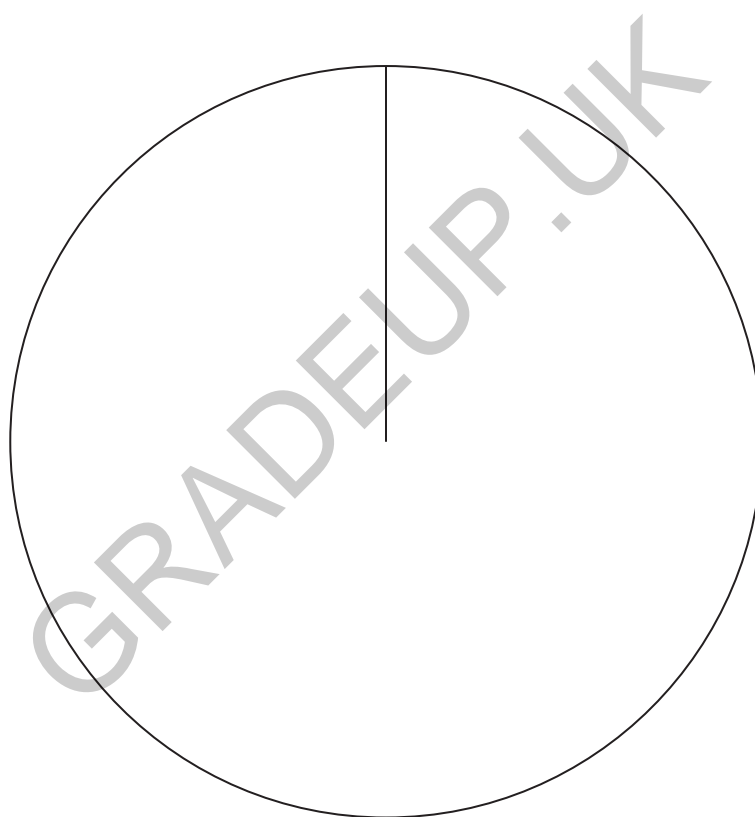


P 7 6 9 2 6 A 0 9 2 8

14 The table gives information about the drinks people ordered in a cafe.

Drink	Number of people
Coffee	30
Hot chocolate	10
Tea	50

Draw an accurate pie chart for this information.



(Total for Question 14 is 3 marks)

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15 Which is greater

15% of 88 **or** 20% of 62?

You must show all your working.

(Total for Question 15 is 3 marks)

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P 7 6 9 2 6 A 0 1 1 2 8

16 (a) Simplify $m \times m \times m \times m$

.....
(1)

In a competition, a player gets

5 points for each game they win
2 points for each game they draw
0 points for each game they lose.

Amy wins x games and draws y games.

(b) Write down an expression, in terms of x and y , for the total number of points Amy gets.

.....
(2)

(Total for Question 16 is 3 marks)

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17 Here are the ingredients needed to make 20 shortbread biscuits.

Ingredients for 20 shortbread biscuits

120 g of butter
200 g of flour
50 g of sugar

Heidi wants to make 30 shortbread biscuits.

How much of each ingredient will Heidi need?

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butter g

flour g

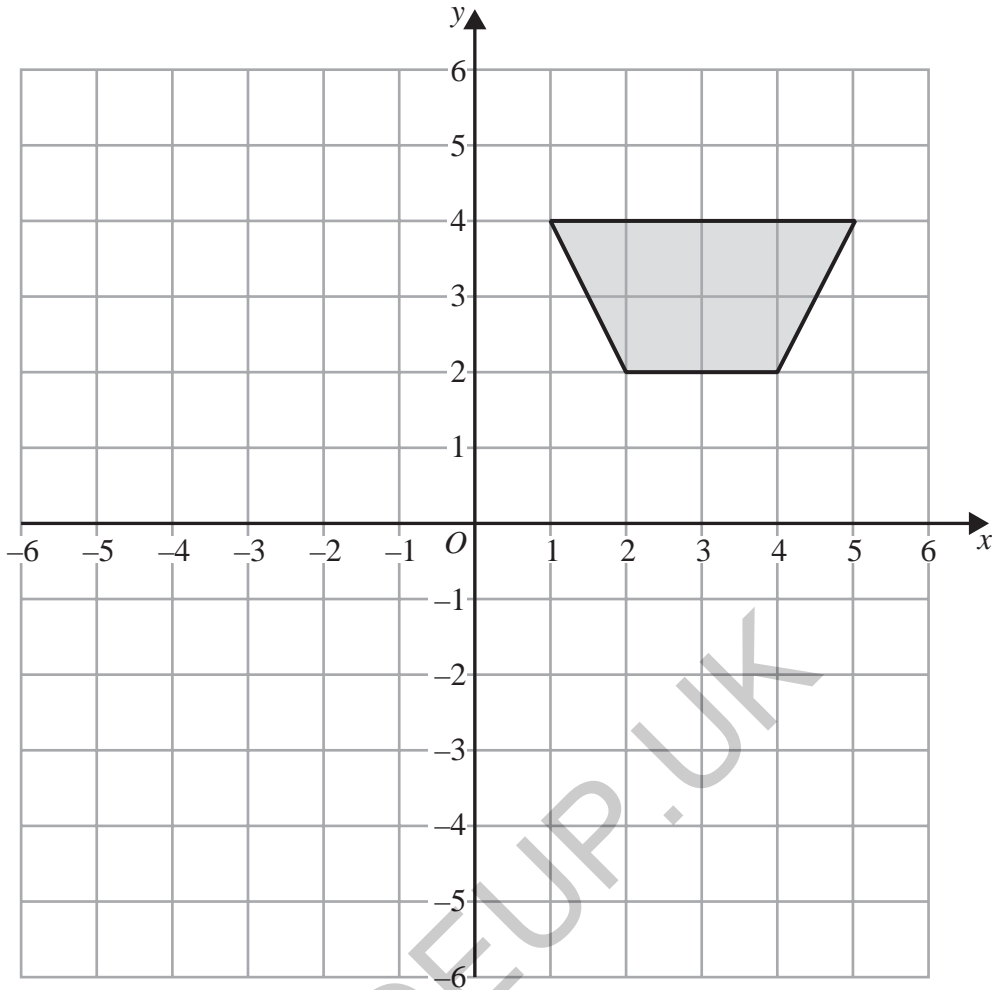
sugar g

(Total for Question 17 is 3 marks)



P 7 6 9 2 6 A 0 1 3 2 8

18



(a) On the grid above, rotate the shaded shape 180° about (0, 0)

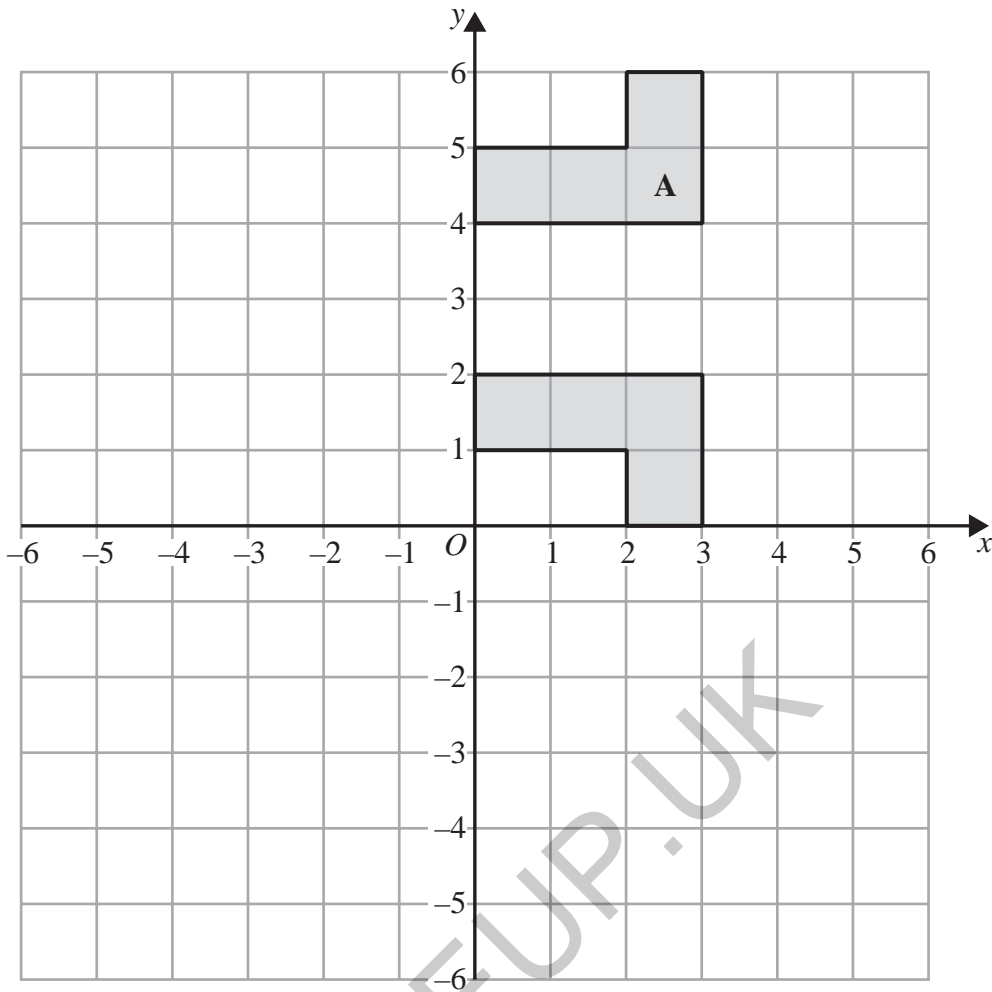
(2)

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Mike was asked to

‘Reflect shape **A** in the line with equation $x = 3$ ’

Mike’s answer is shown on the grid.
His answer is wrong.

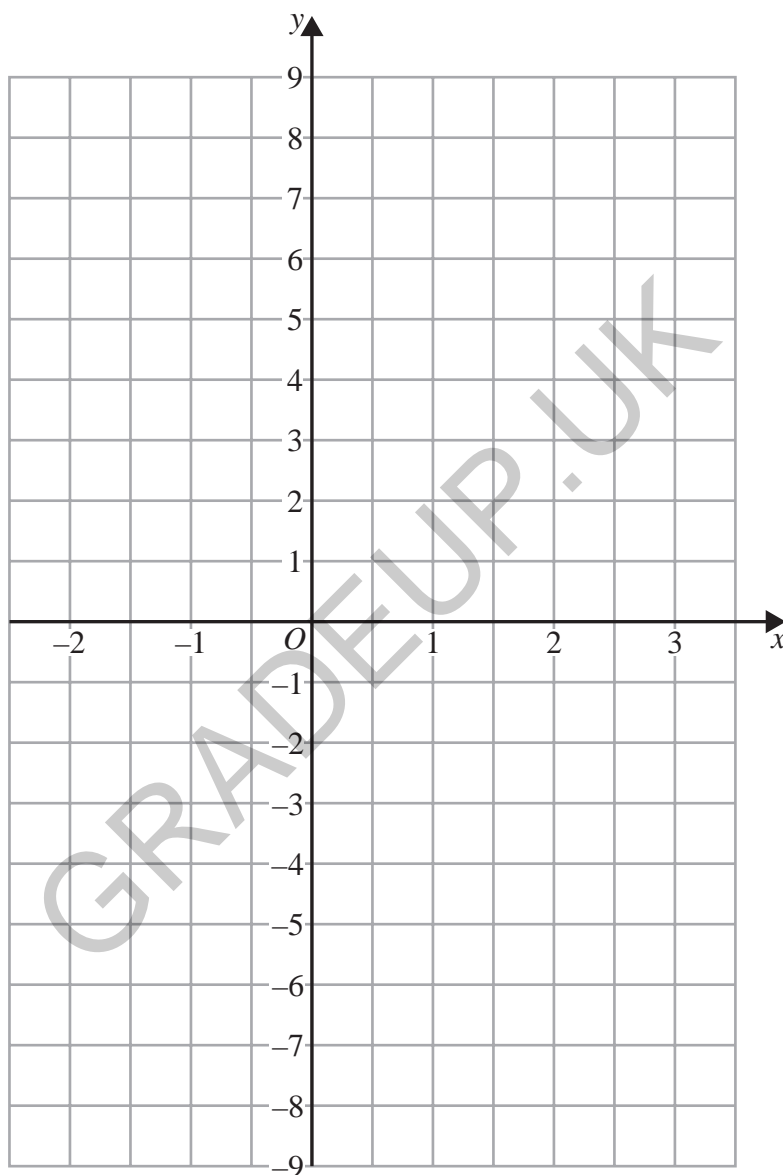
(b) Explain why.

(1)

(Total for Question 18 is 3 marks)



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



(Total for Question 19 is 3 marks)

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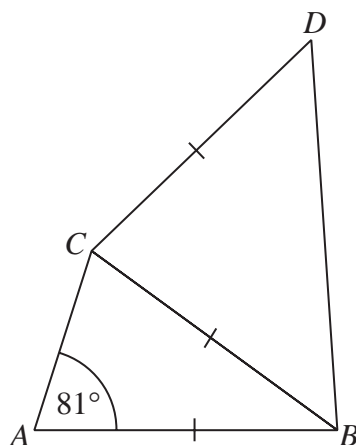


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20 ABC and BCD are isosceles triangles.



$AB = BC = CD$
Angle $CAB = 81^\circ$

Angle $BCD = 4 \times \text{angle } ABC$

Find

the size of angle ABC : the size of angle CBD

Give your answer in the form $1 : n$
You must show all your working.

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.....
(Total for Question 20 is 5 marks)



21 (a) Factorise $6x - 15$

.....
(1)

(b) Factorise $m^2 + 5m$

.....
(1)

(Total for Question 21 is 2 marks)

22 Find the highest common factor (HCF) of 63 and 105

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(Total for Question 22 is 2 marks)

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23 (a) (i) Write 5.3×10^4 as an ordinary number.

.....
(1)

(ii) Write 7.4×10^{-5} as an ordinary number.

.....
(1)

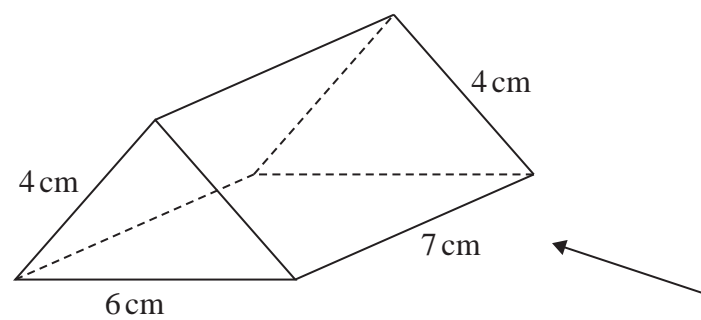
(b) Calculate the value of $9.7 \times 10^6 + 2.45 \times 10^7$
Give your answer in standard form.

.....
(2)

(Total for Question 23 is 4 marks)

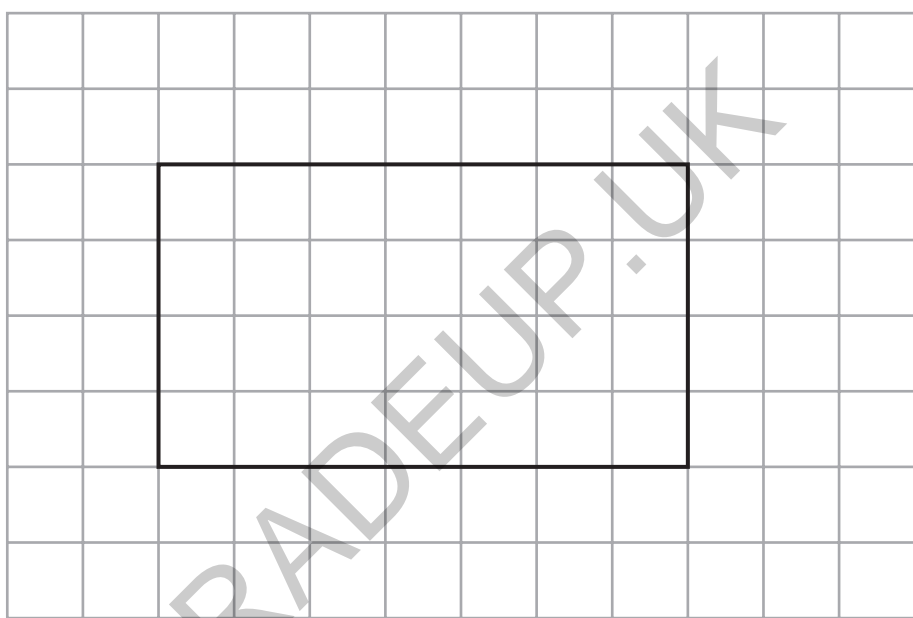


24 The diagram shows a solid triangular prism.



Rana is trying to draw the side elevation of the solid prism from the direction of the arrow.

Here is her answer on a centimetre grid.



(a) Explain why Rana's side elevation is not correct.

.....

.....

.....

(1)

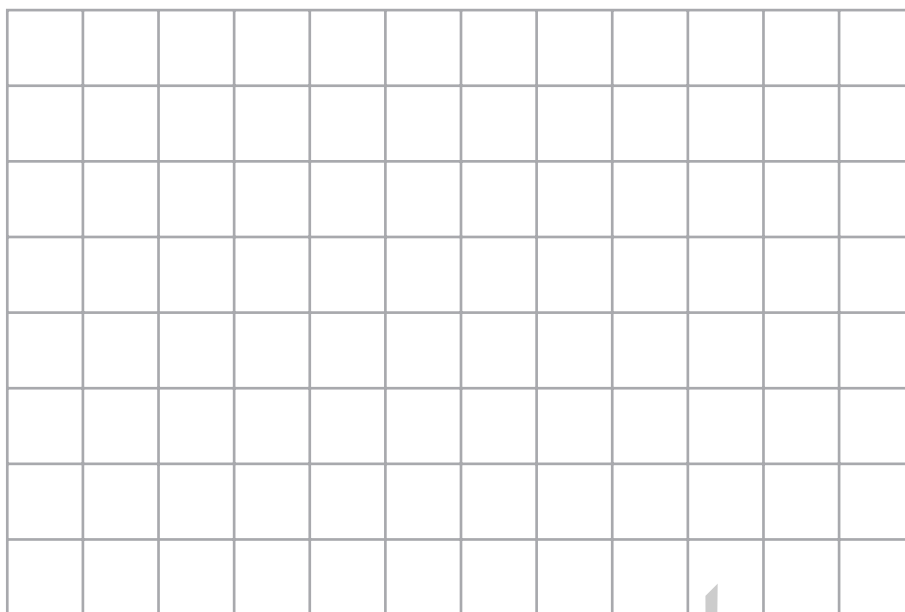


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(b) On the centimetre grid below, draw a plan of the solid prism.



(2)

(Total for Question 24 is 3 marks)

- 25 A company has 25 000 workers.
The number of workers increases at a rate of 6% per year for 3 years.
Calculate the total number of workers at the end of the 3 years.

.....
(Total for Question 25 is 4 marks)



26 Habib has two identical tins.

He puts 600 grams of flour into one of the tins.

The flour fills the tin completely.

The density of the flour is 0.6 g/cm^3

Habib puts 600 grams of salt into the other tin.

The salt does **not** fill the tin completely.

The volume of the space in the tin that is **not** filled with salt is 700 cm^3

Work out the density of the salt.

You must show all your working.

..... g/cm^3

(Total for Question 26 is 4 marks)

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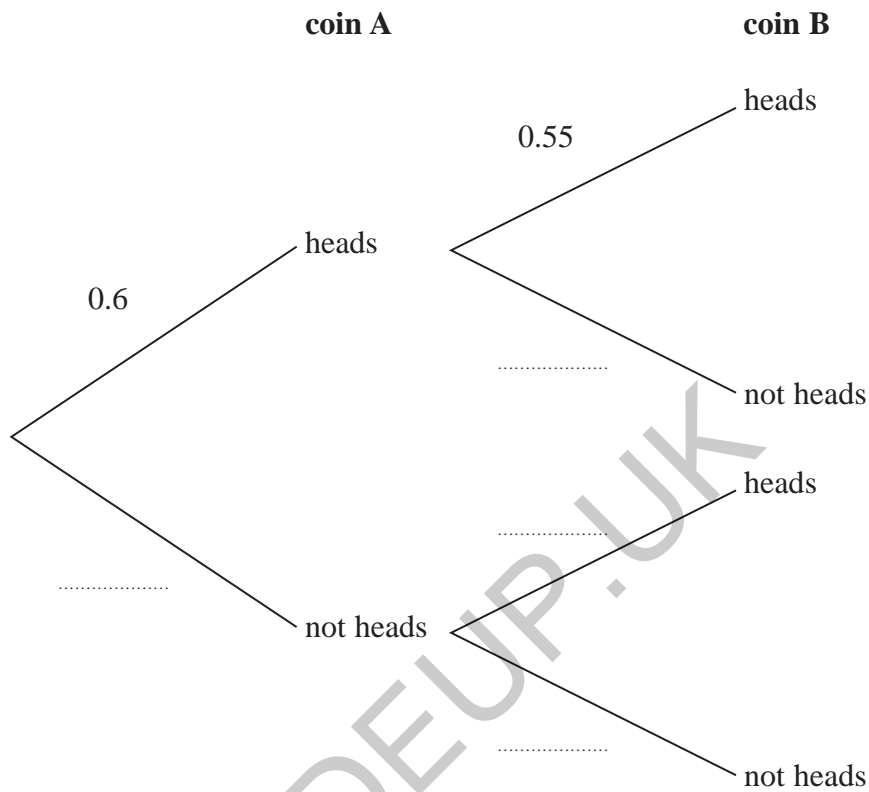
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27 Tim has two biased coins, coin **A** and coin **B**.
He is going to throw both coins.

The probability that coin **A** will land on heads is 0.6
The probability that coin **B** will land on heads is 0.55

(a) Complete the probability tree diagram.



(2)

Tim throws coin **A** once and he throws coin **B** once.

(b) Work out the probability that both coins land on heads.

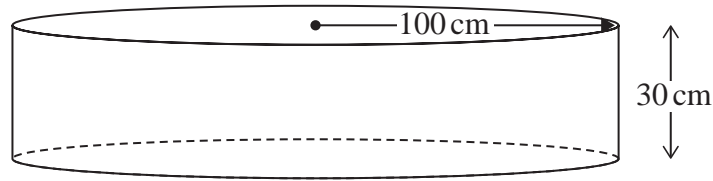
.....
(2)

(Total for Question 27 is 4 marks)



P 7 6 9 2 6 A 0 2 3 2 8

28 A paddling pool is in the shape of a cylinder.



The pool has radius 100 cm.
The pool has depth 30 cm.

The pool is empty.
It is then filled with water at a rate of 250 cm^3 per second.

Work out the number of minutes it takes to fill the pool completely.
Give your answer correct to the nearest minute.
You must show all your working.

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..... minutes

(Total for Question 28 is 4 marks)

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29 $w = 40 - t^2$

(a) Calculate the value of w when $t = -5$

$w = \dots\dots\dots$
(2)

$$p = \frac{h - 5}{3}$$

(b) Make h the subject of the formula.

$\dots\dots\dots$
(2)

(Total for Question 29 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS



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