

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)		<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>	
Time 1 hour 30 minutes		Paper reference 1MA1/2F	
Mathematics PAPER 2 (Calculator) Foundation Tier			
You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.			Total Marks <div style="border: 1px solid black; width: 50px; height: 30px; margin-top: 5px;"></div>

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.
- 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.*

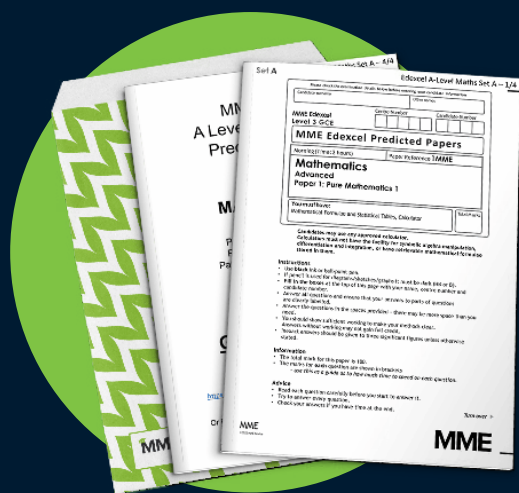
Advice

- 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.
- Good luck with your examination.

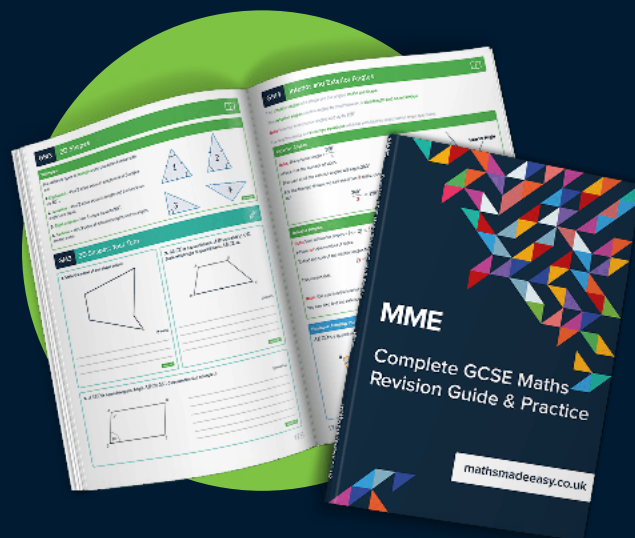
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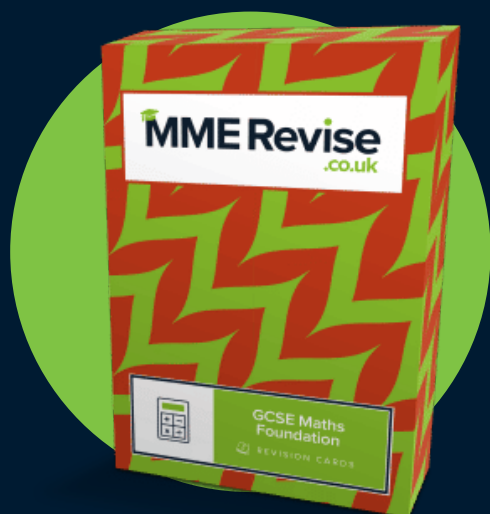
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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 1476 to the nearest 10

1480

(Total for Question 1 is 1 mark)

- 2 Write a fraction in the box to make the calculation correct.

$$1 - \frac{3}{10} =$$

7
10

(Total for Question 2 is 1 mark)

- 3 Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

3

(Total for Question 3 is 1 mark)

- 4 Write down a 3 digit number that is a multiple of 5

725

(Total for Question 4 is 1 mark)

- 5 Write 0.4 as a percentage.

40

%

(Total for Question 5 is 1 mark)

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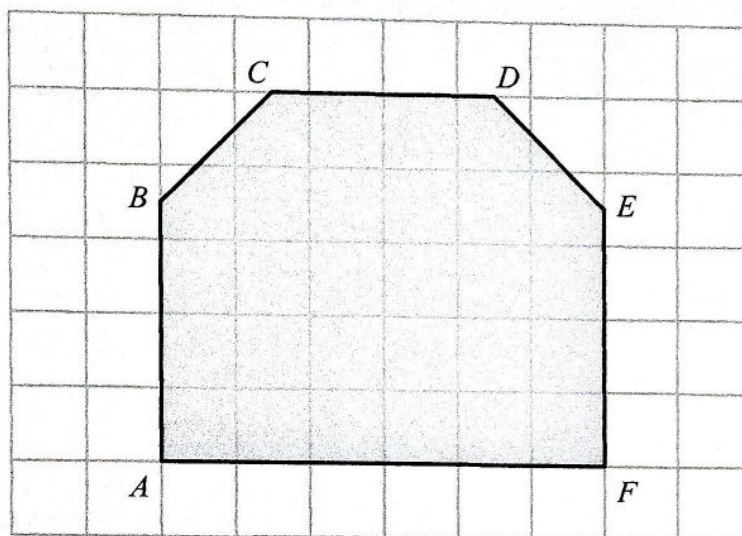
- 6 Write the following numbers in order of size.
Start with the smallest number.

-11 -2 8 -7 3 10

-11 -7 -2 3 8 10

(Total for Question 6 is 1 mark)

- 7 Here is polygon $ABCDEF$ on a square grid.



- (a) Write down the mathematical name of the polygon.

Hexagon

(1)

- (b) Which side of the polygon is parallel to the side CD ?

AF

(1)

- (c) Write down a side of the polygon that is perpendicular to the side AF .

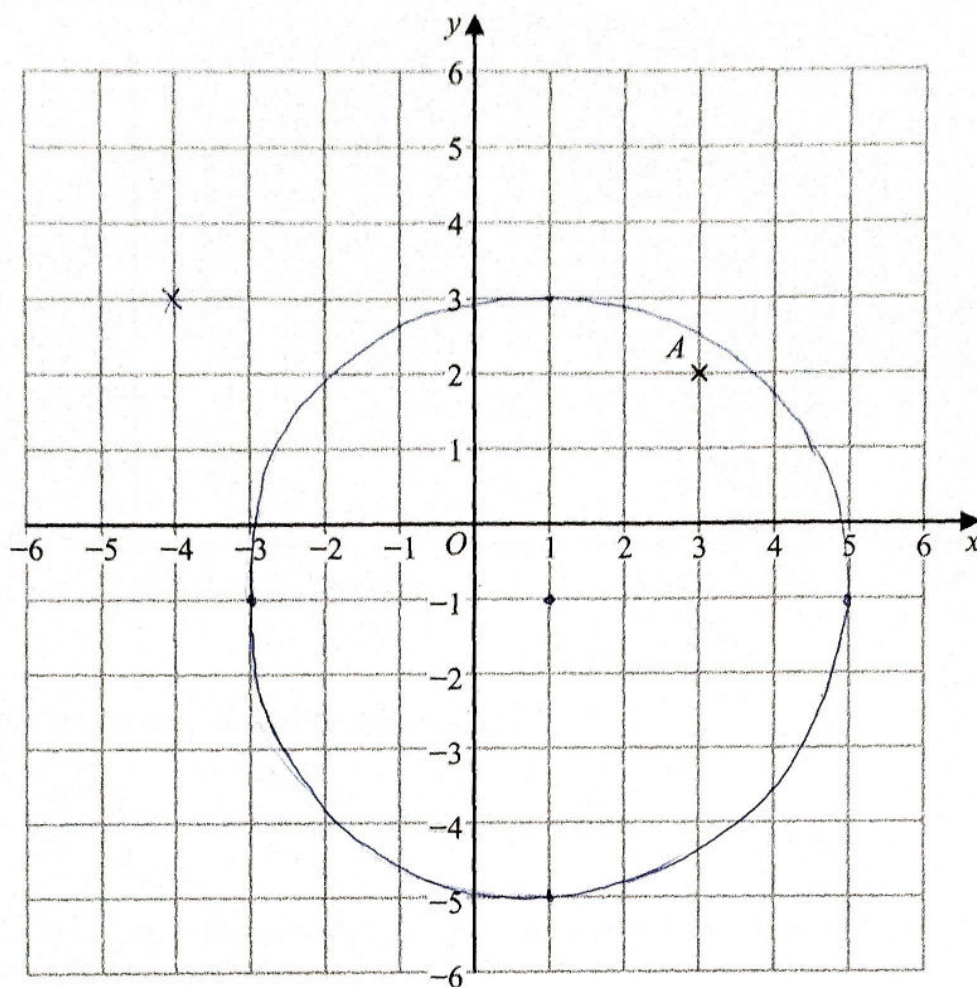
AB

(1)

(Total for Question 7 is 3 marks)



8 Here is a centimetre grid.



(a) Write down the coordinates of point A .

(3, 2)
(1)

(b) On the grid, mark with a cross (x) the point with coordinates $(-4, 3)$
Label this point B .

(1)

(c) On the grid, draw the circle with
centre $(1, -1)$
and radius 4 cm.

(2)

(Total for Question 8 is 4 marks)

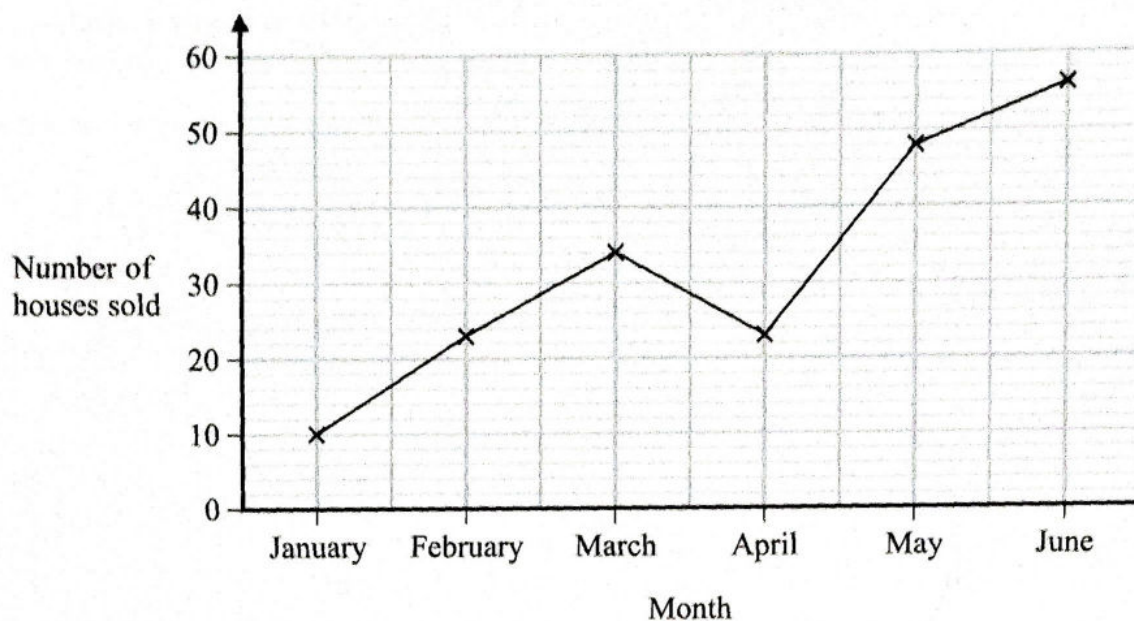
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- 9 The graph shows information about the number of houses sold by an estate agent in each of six months last year.



- (a) How many houses were sold by the estate agent in February?

23

(1)

- (b) For this estate agent, write down the ratio of the number of houses sold in January to the number of houses sold in June.

10:57

(2)

(Total for Question 9 is 3 marks)



10 Sonia wants to book a holiday.

The holiday will cost £1428

Sonia will pay a deposit of £150

She will then pay the rest of the cost in 6 equal monthly payments.

How much is each monthly payment?

$$£1428 - £150 = £1278$$

$$£1278 \div 6 = £213$$

£ 213

(Total for Question 10 is 3 marks)

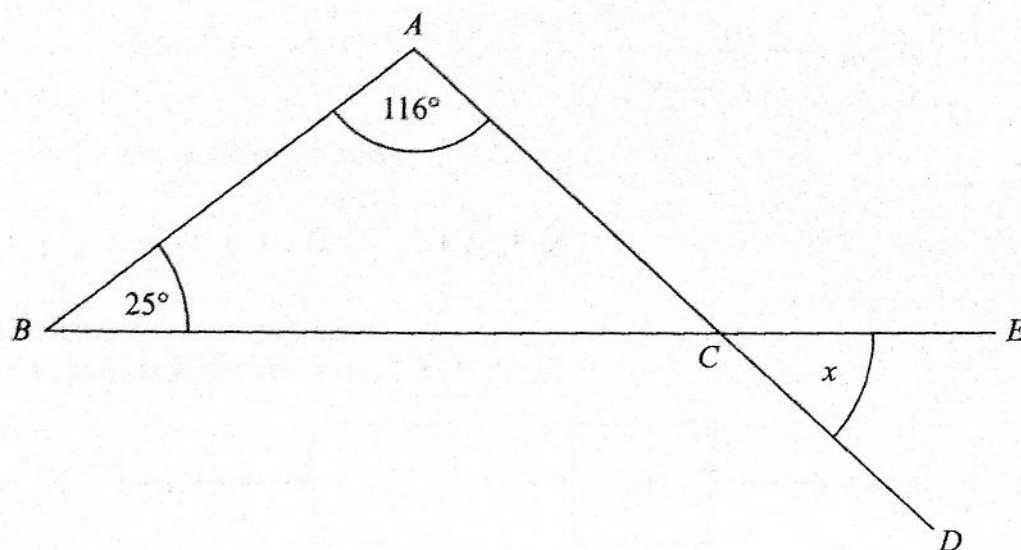
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11 The diagram shows a triangle ABC .



ACD and BCE are straight lines.

Work out the size of the angle marked x .
Give a reason for each stage of your working.

$$180 - (116 + 25) = 39^\circ \quad \text{Angles in a triangle add up to } 180^\circ$$

$$\angle ACB = 39^\circ$$

$$x = 39^\circ \quad \text{Vertically opposite angles are equal}$$

39

(Total for Question 11 is 3 marks)



12 Here is a number machine.



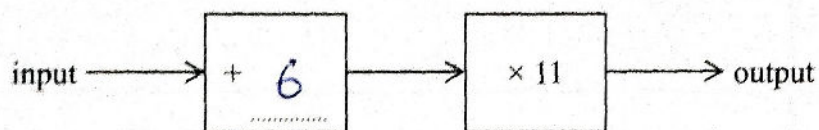
(a) Work out the output when the input is 28

$$28 - 7 = 4$$

$$4 + 5 = 9$$

9
(1)

Here is a different number machine.
The number machine is not complete.



When the input is 8, the output is 154

(b) Complete the number machine.

$$154 \div 11 = 14$$

$$14 - 6 = 8$$

(2)

(Total for Question 12 is 3 marks)

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- 13 Sophie works in a bed shop.
During the last three months she sold 198 beds.

59 beds were sold without a mattress.

45 beds were double beds.

17 of the single beds were sold without a mattress.

67 of the 83 king size beds were sold with a mattress.

Use this information to complete the two-way table.

	Single	Double	King size	Total
With mattress	53	19	67	139
Without mattress	17	26	16	59
Total	70	45	83	198

(Total for Question 13 is 3 marks)

- 14 The box below contains three mathematical symbols.

$=$ $<$ $>$

From the box, choose a symbol to make each of the following statements correct.

(i) $\frac{5}{8} \dots\dots\dots > \dots\dots\dots \frac{2}{8}$ (1)

(ii) $-2 \times -3 \dots\dots\dots = \dots\dots\dots -3 + 9$ (1)

(Total for Question 14 is 2 marks)



- 15 The table shows information about the number of social media accounts used by each of 300 students.

Number of social media accounts	Frequency
0	3
1	57
2	84
3	75
4	81

Cumulative F.

3
60
144
219
300

- (a) Work out the total number of social media accounts used by these students.

$$(3 \times 0) + (1 \times 57) + (2 \times 84) + (3 \times 75) + (4 \times 81) = 774$$

774
(2)

- (b) Find the median number of social media accounts used by these students.

$$300 \div 2 = 150^{\text{th}} \text{ person}$$

3
(2)

(Total for Question 15 is 4 marks)

- 16 On a scale drawing, a building has length 12.4 cm and width 9.4 cm. The real length of the building is 62 metres.

Work out, in metres, the real width of the building.

$$62 \div 12.4 = 5$$

$$9.4 \times 5 = 47$$

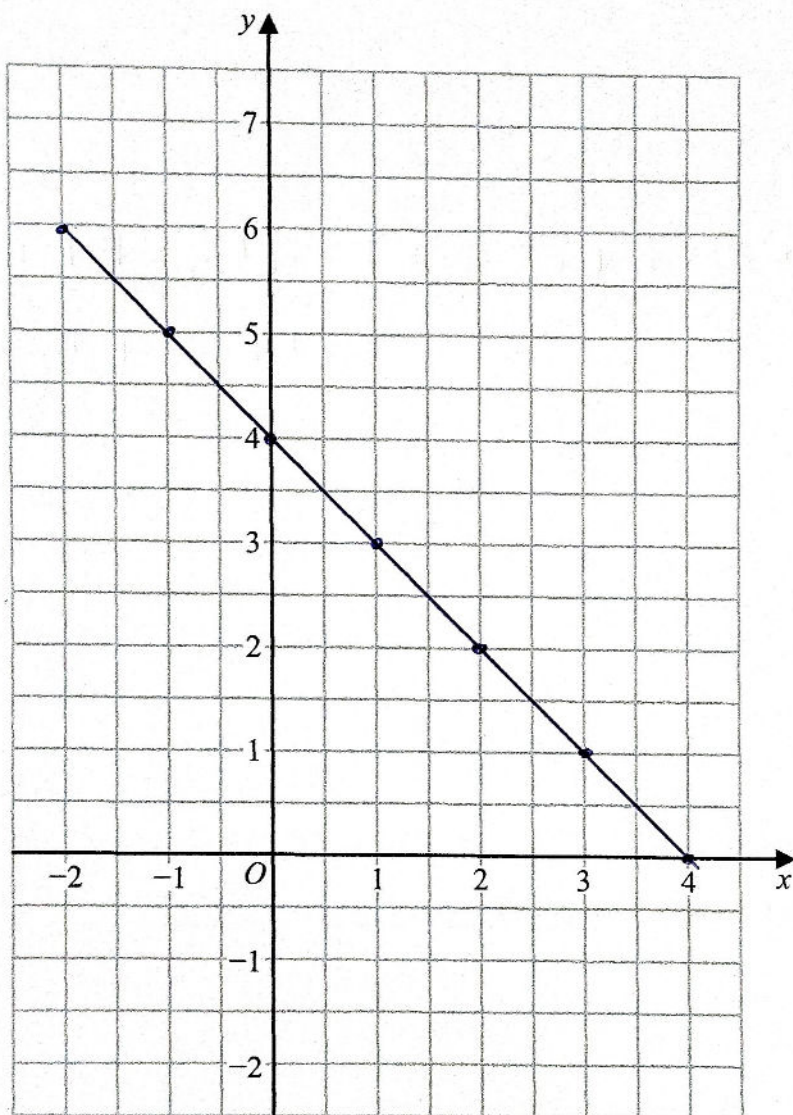
47 metres

(Total for Question 16 is 3 marks)



17 On the grid below, draw the graph of $y = 4 - x$ for values of x from -2 to 4

x	-2	-1	0	1	2	3	4
y	6	5	4	3	2	1	0



(Total for Question 17 is 3 marks)



18 This sign was in a doctor's waiting room.

115 appointments were missed last month.

These missed appointments were a total of 25.3 hours.

Work out the mean length of time for each missed appointment.
Give your answer in minutes.

converting hours into minutes: $25.3 \times 60 = 1518$

$$\text{mean: } \frac{1518}{115} = 13.2$$

13.2 minutes

(Total for Question 18 is 3 marks)

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19 Nimra buys a 3 kg box of sweets for £17.60

She puts the sweets into bags to sell.

Each bag contains 150 g of sweets.

Nimra fills as many bags as possible.

She will sell each bag for the same price.

Nimra wants to make a profit of at least 35%

Assuming she sells all the bags,

what is the lowest price Nimra should charge for each bag?

$$\begin{array}{l} \text{number of small bags} \Rightarrow \frac{3 \text{ kg}}{150 \text{ g}} = \frac{3000 \text{ g}}{150 \text{ g}} = 20 \\ \text{that can be filled} \end{array}$$

$$35\% \text{ increase on } £17.60 \Rightarrow £17.60 \times 1.35 = £23.76$$

$$£23.76 \div 20 = £1.188$$

£ 1.19

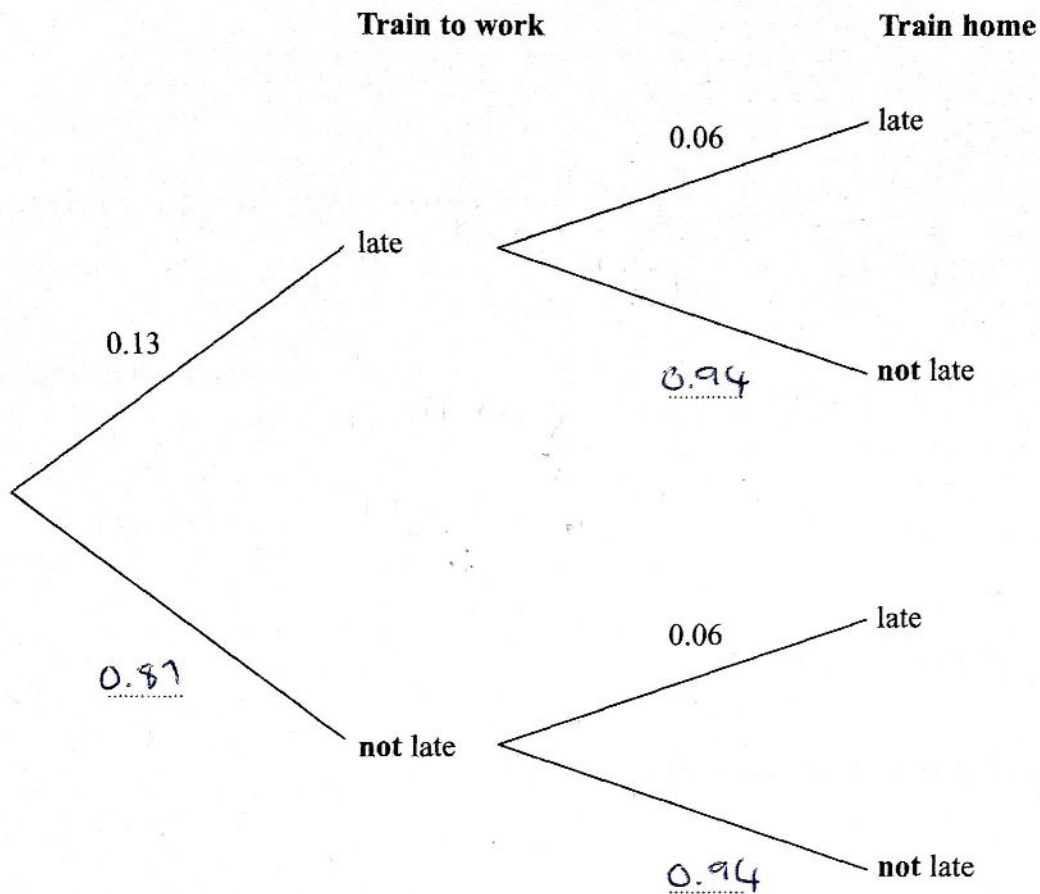
(Total for Question 19 is 5 marks)



- 20 Lorena gets a train at the same time each morning to go to work.
She gets a train at the same time each evening to come home.

The probability tree diagram shows the probabilities of each train arriving late.

- (a) Complete the probability tree diagram.



(2)

For a day that Lorena goes to work,

- (b) work out the probability that the train to work and the train home will both arrive late.

$$0.13 \times 0.06 = 0.0078$$

0.0078

(2)

(Total for Question 20 is 4 marks)



21 (a) Simplify $(x^3)^5$

$$x^{15}$$

(1)

(b) Expand and simplify $4(x + 3) + 7(4 - 2x)$

$$4x + 12 + 28 - 14x$$

$$40 - 10x$$

(2)

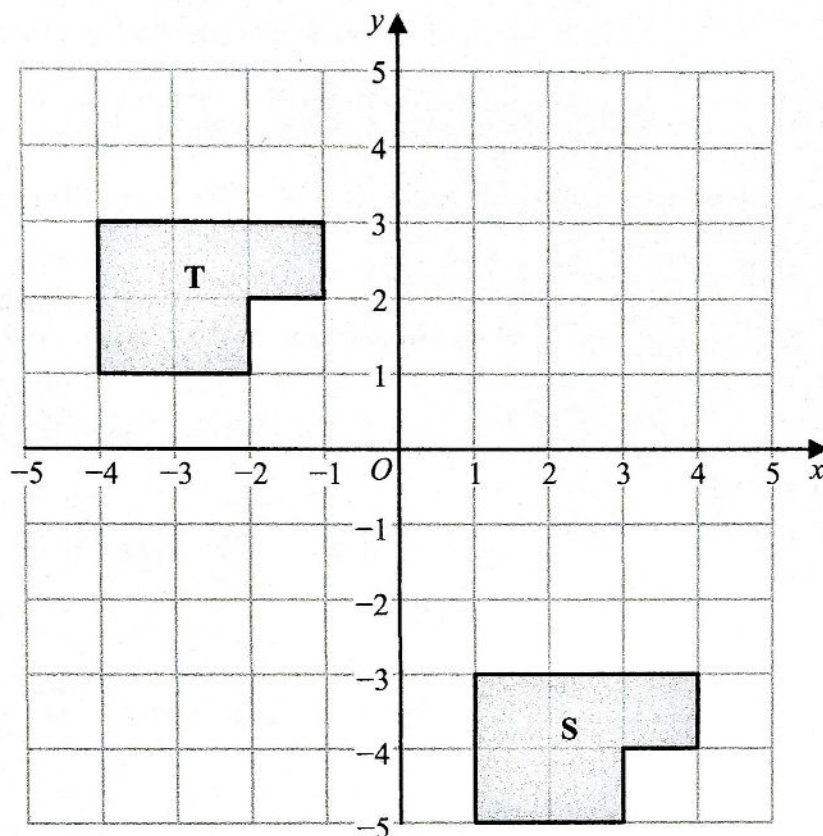
(c) Factorise fully $15x^3 + 3x^2y$

$$3x^2(5x + y)$$

(2)

(Total for Question 21 is 5 marks)

22



Describe fully the single transformation that maps shape S onto shape T.

Translation by the vector $\begin{pmatrix} -5 \\ 6 \end{pmatrix}$

(Total for Question 22 is 2 marks)

23 The length of a football pitch is 90 metres, correct to the nearest metre.

Complete the error interval for the length of the football pitch.

89.5 m \leq length < 90.5 m

(Total for Question 23 is 2 marks)



- 24 Festival A will be in a rectangular field with an area of $80\,000\text{ m}^2$
The greatest number of people allowed to attend Festival A is 425

Festival B will be in a rectangular field 700m by 2000m.

The greatest number of people allowed to attend Festival B is 6750

The area per person allowed for Festival B is greater than the area per person allowed for Festival A.

- (a) How much greater?

Give your answer correct to the nearest whole number.

$$\text{Festival B Area: } 700 \times 2000 = 1400000$$

$$\text{Festival A Area Per Person} = \frac{80000}{425} = 188.23...$$

$$\text{Festival B Area Per Person} = \frac{1400000}{6750} = 207.40...$$

$$207.40 - 188.23 = 19.17...$$

$$\underline{\quad 19 \quad} \text{ m}^2$$

(1)

Callum says,

" 300 cm^2 is the same as 3 m^2 because there are 100 cm in 1 m so you divide by 100"

Callum's method is wrong.

- (b) Explain why.

Because there are 10000 cm^2 in 1 m^2 Callum should divide by 100 twice

(1)

(Total for Question 24 is 5 marks)



- 25 The points L , M and N are such that LMN is a straight line.

The coordinates of L are $(-3, 1)$

The coordinates of M are $(4, 9)$

Given that $LM : MN = 2 : 3$,

find the coordinates of N .

$$\begin{array}{lll} x: & 4 - (-3) = 7 & 7 \div 2 = 3.5 \quad 3.5 \times 3 = 10.5 \\ y: & 9 - 1 = 8 & 8 \div 2 = 4 \quad 4 \times 3 = 12 \end{array}$$

$$N: (10.5 + 4, 12 + 9) \rightarrow (14.5, 21)$$

(14.5, 21)

(Total for Question 25 is 4 marks)

- 26 A new phone cost £679
The value of the phone decreases at a rate of 4% per year.

Work out the value of the phone at the end of 3 years.

$$4\% = 0.04$$

$$4\% \text{ decrease} = 1 - 0.04 = 0.96$$

$$679 \times 0.96^3 = £600.74$$

£ 600.74

(Total for Question 26 is 3 marks)



- 27 In Spain, Sam pays 27 euros for 18 litres of petrol.
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.

1 euro = £0.85
4.5 litres = 1 gallon

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?

You must show how you get your answer.

$$18 \div 4.5 = 4 \text{ (gallons)}$$

$$27 \times 0.85 = 22.95 \text{ (pounds)}$$

$$8 \text{ gallons} = £45.90 \rightarrow \text{Spain price}$$

No, not correct as $45.90 > 40.80$

(Total for Question 27 is 4 marks)



- 27 In Spain, Sam pays 27 euros for 18 litres of petrol.
In Wales, Leo pays £40.80 for 8 gallons of the same type of petrol.

$$1 \text{ euro} = \text{£}0.85$$

$$4.5 \text{ litres} = 1 \text{ gallon}$$

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?

You must show how you get your answer.

$$18 \div 4.5 = 4 \text{ (gallons)}$$

$$27 \times 0.85 = 22.95 \text{ (pounds)}$$

$$8 \text{ gallons} = \text{£}45.90 \rightarrow \text{Spain price}$$

No, not correct. as $45.90 > 40.80$

(Total for Question 27 is 4 marks)



28 Solve the simultaneous equations

$$5x + 2y = 27 \quad \times 2$$

$$6x + 4y = 28$$

$$\begin{array}{r} 10x + 4y = 54 \\ 6x + 4y = 28 \quad - \\ \hline 4x = 26 \\ x = 6.5 \end{array}$$

$$5(6.5) + 2y = 27$$

$$2y = 27 - 32.5$$

$$2y = -5.5$$

$$y = -2.75$$

$$x = 6.5$$

$$y = -2.75$$

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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