

BUMPER "BETWEEN PAPERS" PRACTICE FOUNDATION

SUMMER 2023 QUESTIONS

NOT A "BEST" GUESS PAPER.

**NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT!
YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 IT MAY STILL COME
UP ON PAPERS 2 OR 3 ...**

**WE KNOW HOW IMPORTANT IT IS TO PRACTICE, PRACTICE, PRACTICE SO WE'VE COLLATED A LOAD OF
QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDEXCEL 9-1 GCSE MATHS PAPER 1 BUT WE
CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...**

**ENJOY!
MEL & SEAGER**

Q1. Write 1476 to the nearest 10

(Total for question = 1 mark)

Q2. (a) Write $\frac{1}{4}$ as a decimal.

(1)

(b) Write 0.8 as a percentage.

.....%

(1)

(c) Write the ratio 2 : 6 in its simplest form.

(1)

(Total for Question is 3 marks)

Q3. Ellis thinks of a number.
He multiplies it by 4 and then subtracts 10
The result is 14
What number did Ellis think of?

(Total for question = 3 marks)

Q4. (a) Work out $\frac{2}{5} + \frac{1}{4}$

(2)

(b) Write down the value of 2^{-3}

(1)

(Total for question = 3 marks)

Q5. A number, m , is rounded to 1 decimal place. The result is 9.4
Complete the error interval for m .

..... $\leq m <$

(Total for question = 2 marks)

Q6. Harry invests £5000 for 3 years. He gets simple interest of 4% per year.
Work out the total interest Harry gets.

£.....

(Total for question = 3 marks)

Q7. Work out $\frac{0.06 \times 0.0003}{0.01}$ Give your answer in standard form.

(Total for question = 3 marks)

Q8. Here is a bill for a dishwasher repair. Complete the bill.



Dishwasher Repair

Description	Number	Cost of each item	Total
Filter	1	£28.95	£28.95
Basket wheel	8	£1.50	£
Spray arm	2	£	£20.90
Labour charge 1½ hours at £18.00 an hour			£
Total cost			£

(Total for Question is 4 marks)

Q9. Express 56 as the product of its prime factors.

(Total for question = 2 marks)

Q10. Here is a list of four fractions.

$$\frac{4}{16}$$

$$\frac{2}{8}$$

$$\frac{15}{60}$$

$$\frac{3}{9}$$

One of these fractions is **not** equivalent to $\frac{1}{4}$

Write down this fraction.

(Total for question = 1 mark)

Q11. (a) Write 4.7×10^{-1} as an ordinary number.

(1)

(b) Work out the value of $(2.4 \times 10^3) \times (9.5 \times 10^5)$ Give your answer in standard form.

(2)

(Total for question = 3 marks)

Q12. (a) Find the value of the reciprocal of 1.6 Give your answer as a decimal.

(1)

Jess rounds a number, x , to one decimal place. The result is 9.8

(b) Write down the error interval for x .

(2)

(Total for question = 3 marks)

Q13. Rehan is on holiday in the USA. He has \$200 to spend on clothes.

Rehan buys

1 pair of trainers costing \$60

3 T-shirts costing \$25 each.

He also wants to buy a jacket costing \$80

(a) Has Rehan got enough money to buy the jacket?

You must show how you get your answer.

(3)

The trainers cost \$60

The exchange rate is \$1 = £0.749

Rehan says, "The trainers cost less than £40"

Rehan is wrong.

(b) Using a suitable approximation, show working to explain why.

(2)

(Total for question = 5 marks)

Q14. $-2 < n \leq 3$ n is an integer.

(a) Write down all the possible values of n .

(2)

$3x + 5 > 16$ x is an integer.

(b) Find the smallest value of x .

(3)

(Total for Question is 5 marks)

Q15. The pie chart shows information about how the students in Year 11 get to school.

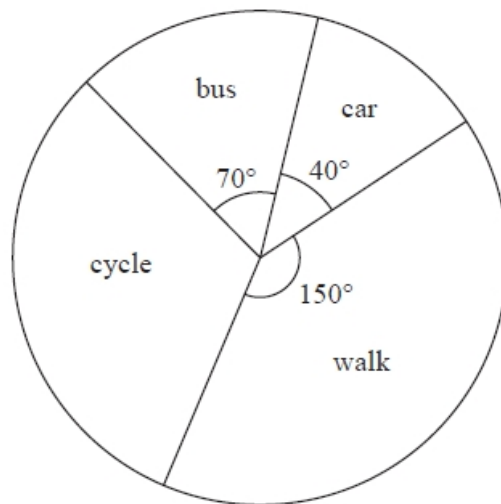


Diagram **NOT** accurately drawn

Mr Morley says, "Less than 10% of students in Year 11 get to school by car".

(a) Is Mr Morley correct? You must explain your answer.

(2)

50 students in Year 11 cycle to school.

(b) How many students in Year 11 walk to school?

(3)

(Total for Question is 5 marks)

Q16. (a) Write these numbers in order of size. Start with the smallest number.

0.401 0.46 0.37 0.439

(1)

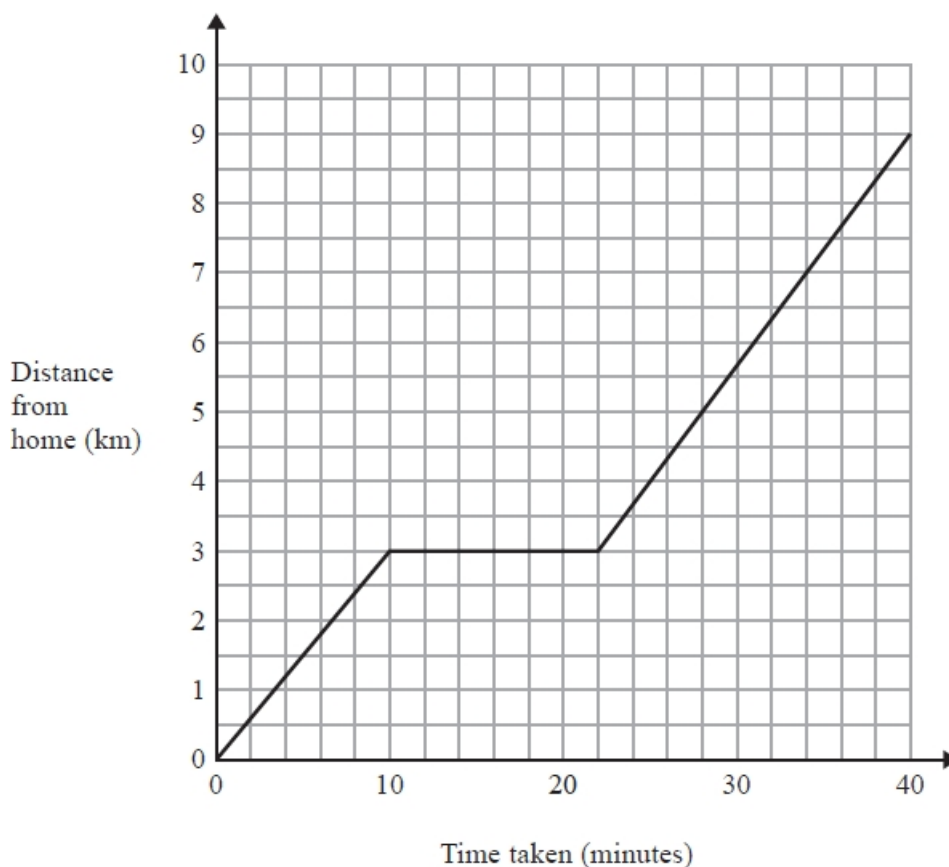
(b) Write these numbers in order of size. Start with the smallest number.

75% $\frac{7}{8}$ 0.25 $\frac{1}{2}$ $\frac{2}{3}$

(2)

(Total for question = 3 marks)

Q17. One day Jane cycled from home to college. She stopped at a shop on the way to college. The travel graph shows Jane's journey from home to college.



(a) Write down the distance from Jane's home to college.

.....km **(1)**

(b) Write down how long Jane stopped at the shop.

.....minutes **(1)**

(Total for question = 2 marks)

Q18. The population of a town increased by 9% between 2018 and 2019

The population in 2019 was 165 680

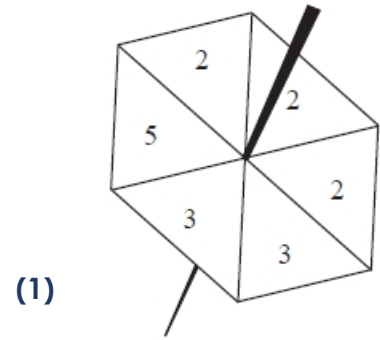
Calculate the population in 2018

(Total for question = 2 marks)

Q19. Meela has a fair 6-sided spinner. The sides of the spinner are numbered 2, 2, 2, 3, 3, 5

Meela spins the spinner once.

(a) Which number is the spinner **least** likely to land on?



(b) From the following list, choose the word that best describes the likelihood that the spinner will land on 2

impossible unlikely evens likely certain

(1)

(c) Write down the probability that the spinner will land on 3

(2)

(Total for Question is 4 marks)

Q20. At the end of October, Fiona's electricity meter reads 88 738 kWh.
At the end of November, her electricity meter reads 89 198 kWh.

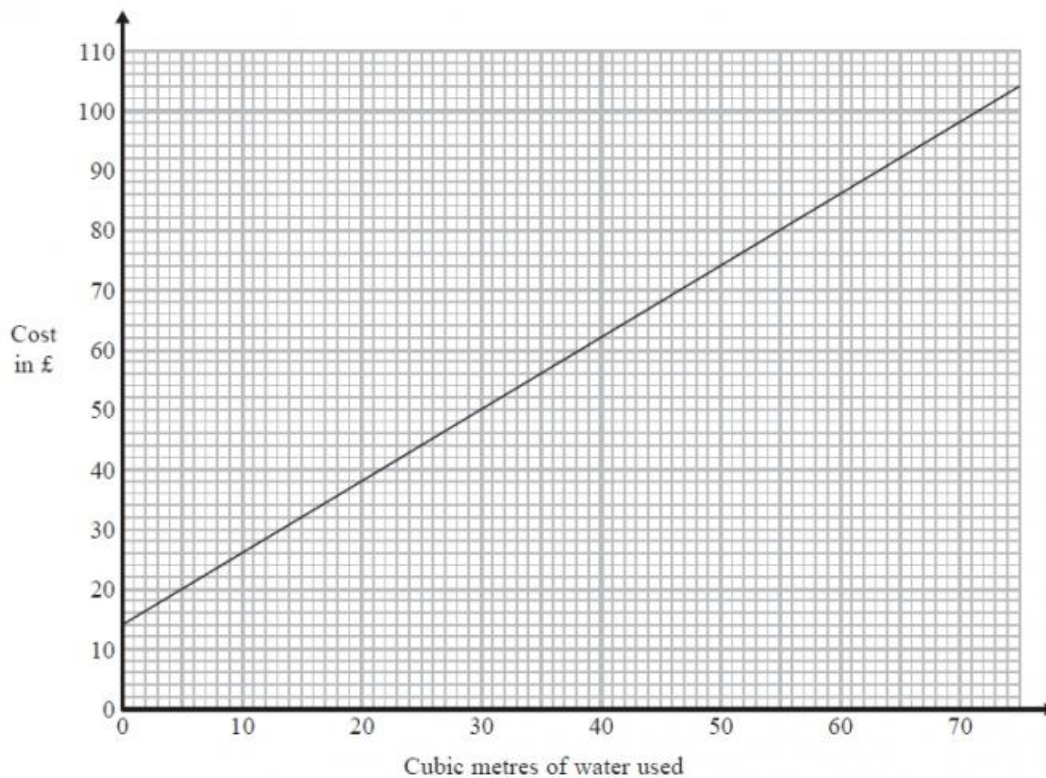
Each kWh of electricity Fiona uses costs 16p

Work out how much Fiona had to pay for the electricity she used in November.

(Total for question = 4 marks)

Q21. Mr Shah is thinking of having a water meter fitted for his house.

For a house with a water meter fitted, the graph shows information about the cost, in pounds (£), of buying water.



Mr Shah does **not** have a water meter.

He used 50 cubic metres of water.

The cost was £80

Would the cost of the water have been cheaper if Mr Shah had a water meter?

You must explain your answer.

(Total for Question is 2 marks)

Q22. (a) Write 1.63×10^{-3} as an ordinary number.

(1)

(b) Write 438 000 in standard form.

(1)

(c) Work out $(4 \times 10^3) \times (6 \times 10^{-5})$. Give your answer in standard form.

(2)

(Total for question = 4 marks)

- Q23.** Dan has some marbles.
Ellie has twice as many marbles as Dan.
Frank has 15 marbles.
Dan, Ellie and Frank have a total of 63 marbles.
How many marbles does Dan have?

(Total for Question is 3 marks)

- Q24.** A shop has two different special offers on milk.

Which offer gives the better value for money?
You must show how you get your answer.



75p

Pay for 2 bottles
get 1 bottle free

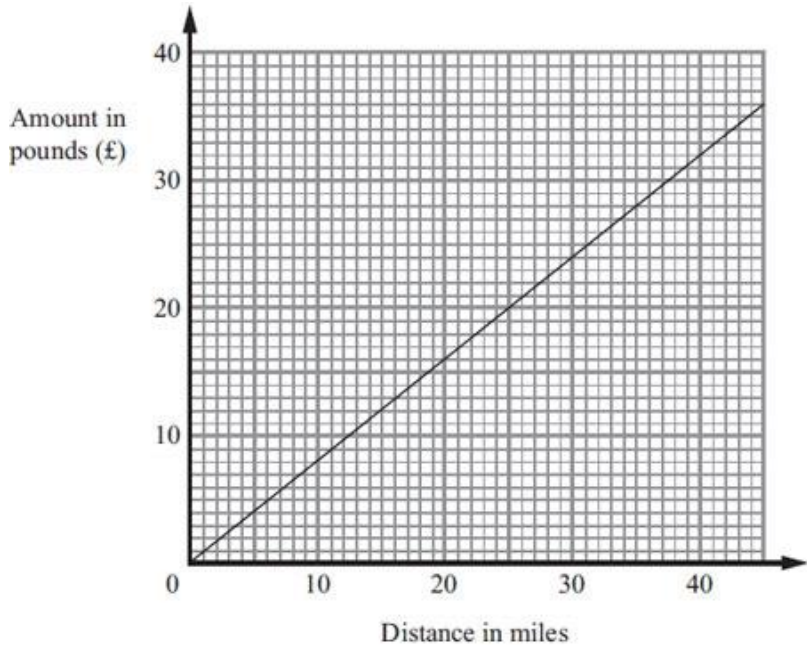


£1.28

Pay for 1 bottle
get 1 bottle half price

(Total for question = 4 marks)

Q25. Sophie's company pays her 80p for each mile she travels.
 The graph can be used to work out how much her company pays her for travel.



Sophie travels 20 miles.

(a) Work out how much her company pays her.

£ (1)

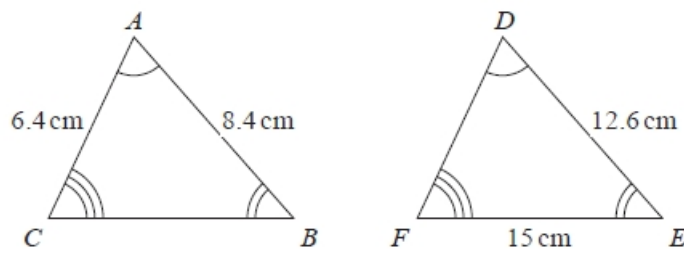
Sophie's company paid her £60

(b) Work out the distance Sophie travelled.

..... miles (2)

(Total for Question is 3 marks)

Q26. Triangle *ABC* and triangle *DEF* are similar.



(a) Work out the length of *DF*.

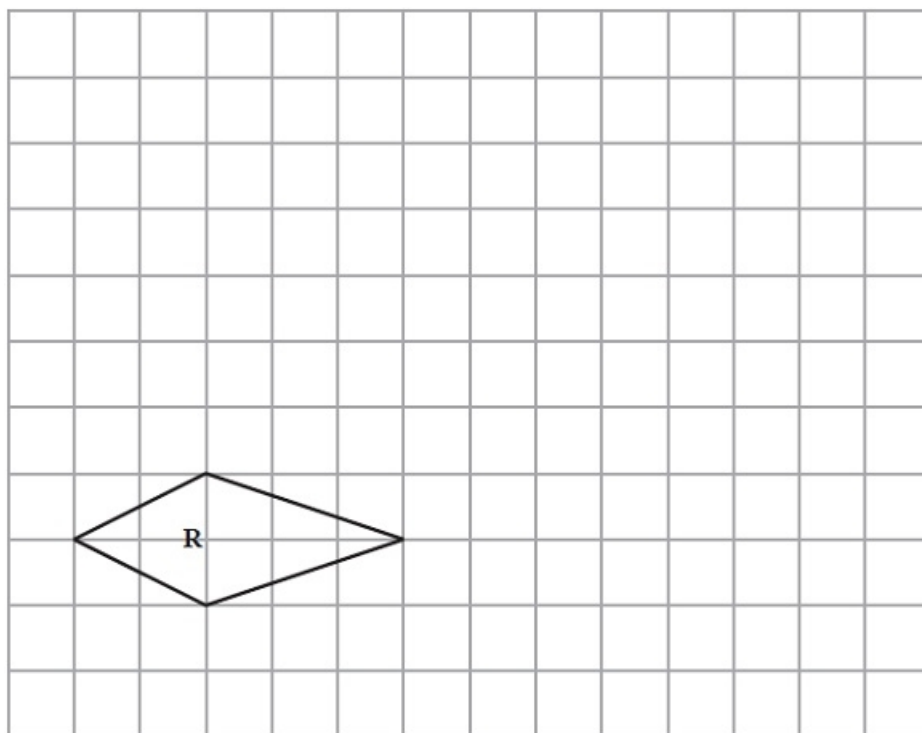
.....cm (2)

(b) Work out the length of *CB*.

.....cm (2)

(Total for question = 4 marks)

Q27.



On the grid, draw an enlargement of shape **R** with a scale factor of 2

(Total for Question is 2 marks)

Q28. (a) Solve $\frac{5x}{2} + 3 > 18$

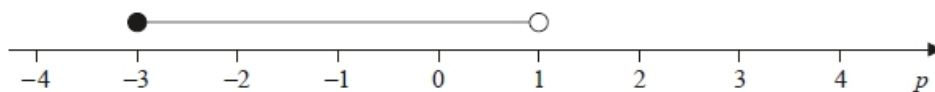
..... (3)

(b) Factorise $x^2 + 10x + 9$

..... (2)

(Total for question = 5 marks)

Q29. Here is a number line.



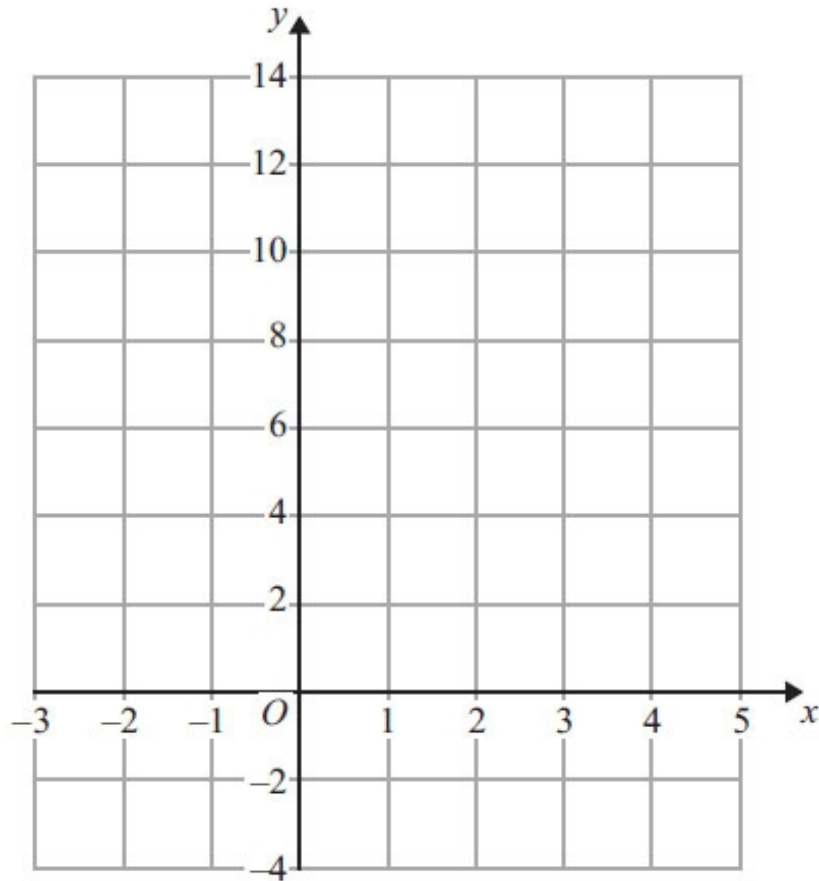
Write down the inequality shown on the number line.

(Total for question = 2 marks)

Q30. (a) Complete the table of values for $y = 2x + 2$

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

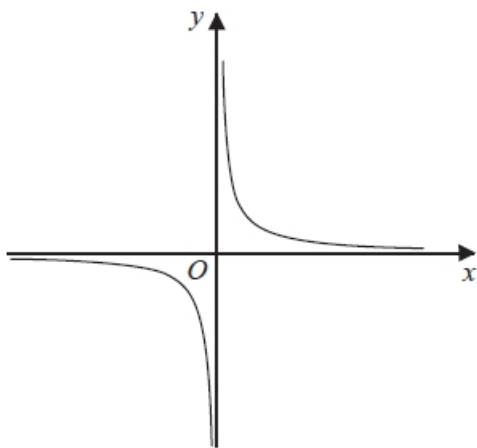
(b) On the grid, draw the graph of $y = 2x + 2$



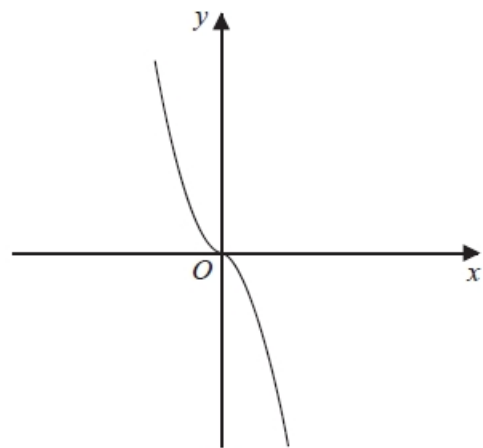
(2)

(Total for Question is 4 marks)

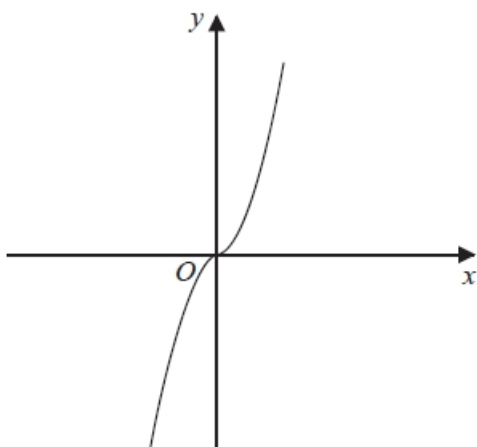
Q31. The diagram shows four graphs.



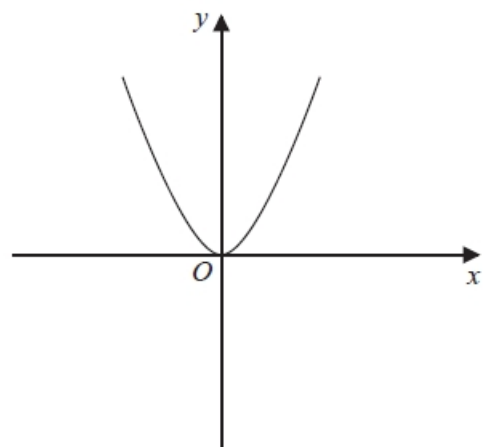
Graph A



Graph B



Graph C



Graph D

Each of the equations in the table is the equation of one of the graphs.

Complete the table.

Equation	Letter of graph
$y = -x^3$	
$y = x^3$	
$y = x^2$	
$y = \frac{1}{x}$	

(Total for question = 2 marks)

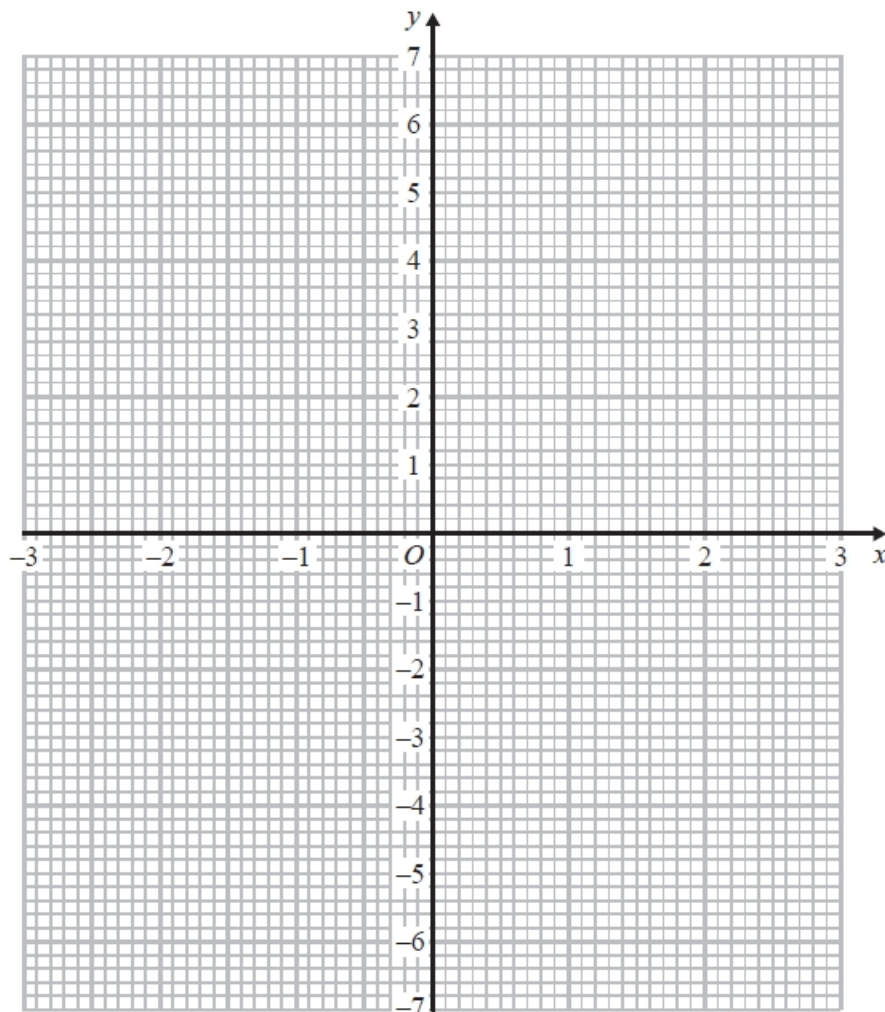
Q32. (a) Complete the table of values for $y = x^2 - x - 6$

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

(2)

(b) On the grid, draw the graph of $y = x^2 - x - 6$ for values of x from -3 to 3

(2)

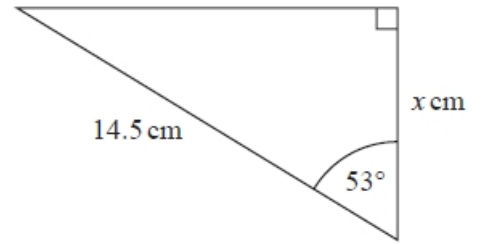


(c) Use your graph to find estimates of the solutions to the equation $x^2 - x - 6 = -2$

(2)

(Total for question = 6 marks)

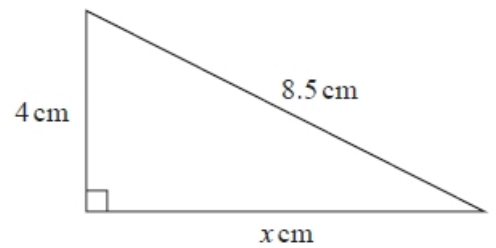
Q33. Work out the value of x .
Give your answer correct to 3 significant figures.



$x = \dots\dots\dots$

(Total for question = 2 marks)

Q34. Here is a right-angled triangle.
Work out the value of x .



$x = \dots\dots\dots$

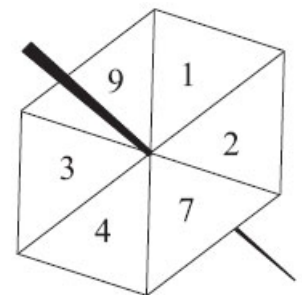
(Total for question = 2 marks)

Q35. Here is a fair 6-sided spinner.

Jake is going to spin the spinner once.

(a) Write down the probability that the spinner will land
(i) on 4

(ii) on a number greater than 10



(2)

Liz is going to spin the spinner 120 times.

(b) Work out an estimate for the number of times the spinner will land on 7

(2)

(Total for Question is 4 mark)

Q36. Emily drives 186 miles in 3 hours.

(a) What is her average speed?

..... mph **(2)**

Sarah drives at an average speed of 58 mph for 4 hours.

(b) How many miles does Sarah drive?

..... miles **(2)**

(Total for question = 4 marks)

Q37. The pictogram shows the number of tins of dog food sold in a shop on Monday, on Tuesday and on Wednesday last week.

Monday	○ ○ ○
Tuesday	○ ○ ○ ○ ◐
Wednesday	○ ○ ◐
Thursday	
Friday	

Key: ○ represents 10 tins

On Thursday, 60 tins of dog food were sold in the shop.

On Friday, 35 tins of dog food were sold in the shop.

(a) Use this information to complete the pictogram.

(2)

More tins of dog food were sold on Tuesday than on Monday.

(b) How many more tins?

(2)

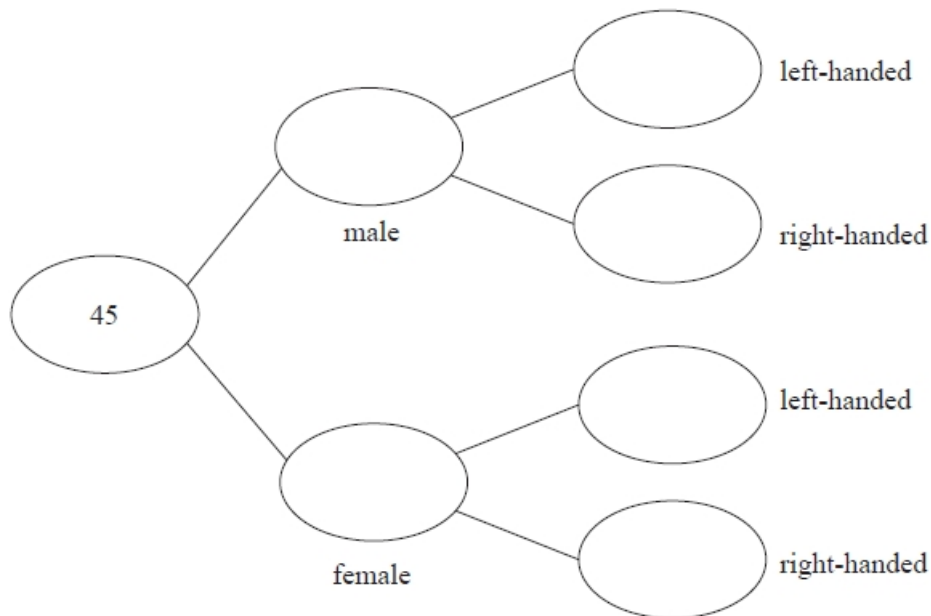
(Total for Question is 4 marks)

Q38. Each worker in a factory is either left-handed or right-handed.

22 of the 45 workers are male.

16 of the 34 right-handed workers are female.

Complete the frequency tree for this information.



(Total for question = 3 marks)

Q39. Nimer was driving to a hotel.

He looked at his Sat Nav at 13 30

Time	13 30
Distance to destination	65 miles

Nimer arrived at the hotel at 14 48

Work out the average speed of the car from 13 30 to 14 48

You must show all your working.

..... mph

(Total for question = 4 marks)

Q40. (a) Draw an angle of 40° at the point P .



(1)

(b) Construct an equilateral triangle with sides of length 6cm.

(2)

(Total for question = 3 marks)

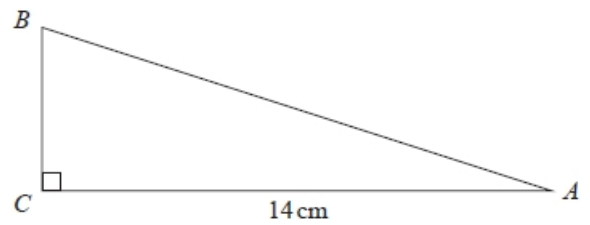
Q41. ABC is a right-angled triangle.

AC = 14 cm.
Angle C = 90°

size of angle B : size of angle A = 3 : 2

Work out the length of AB.

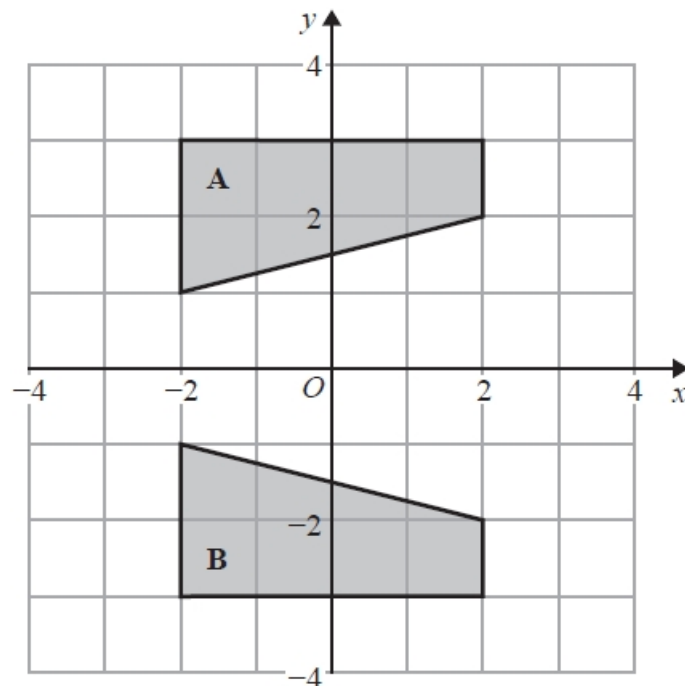
Give your answer correct to 3 significant figures.



..... cm

(Total for question = 4 marks)

Q42.



Describe fully the single transformation that maps shape **A** onto shape **B**.

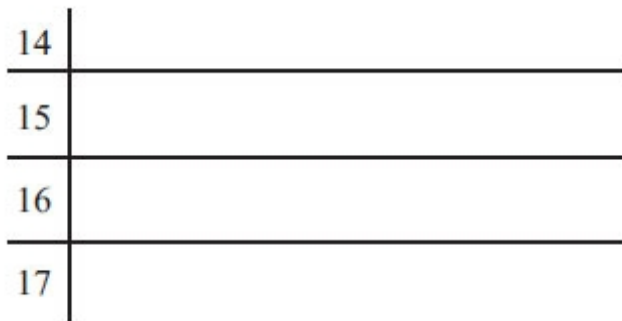
(Total for question = 2 marks)

Q43. There are 25 students in a class. 12 of the students are girls.

Here are the heights, in cm, of the 12 girls.

160 173 148 154 152 164 179 164 162 174 168 170

(a) Show this information in an ordered stem and leaf diagram.



(3)

There are 13 boys in the class.

Here are the heights, in cm, of the 13 boys.

157 159 162 166 168 169 170 173 174 176 176 181 184

(b) Compare the heights of the boys with the heights of the girls.

(3)

(Total for Question is 6 marks)

Q44. $\mathbf{a} = \begin{pmatrix} 4 \\ 5 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$

Work out $\mathbf{a} - 2\mathbf{b}$ as a column vector.

$$\begin{pmatrix} \\ \text{---} \\ \text{---} \end{pmatrix}$$

(Total for question = 2 marks)

Q45. The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings (£ x)	Frequency
$150 < x \leq 250$	1
$250 < x \leq 350$	11
$350 < x \leq 450$	5
$450 < x \leq 550$	0
$550 < x \leq 650$	3

(a) Work out an estimate for the mean of the weekly earnings.

£ (3)

Nadiya says,

"The mean may **not** be the best average to use to represent this information."

(b) Do you agree with Nadiya? You must justify your answer.

(1)
(Total for question = 4 marks)

Q46. The diagram shows part of a map.



(a) Find the bearing of the church from the tower.

.....° (1)

The scale of the map is 1 cm represents 2.5 km.

(b) Work out the real distance between the tower and the church.

.....km (2)

A school is 15 km due North of the church.

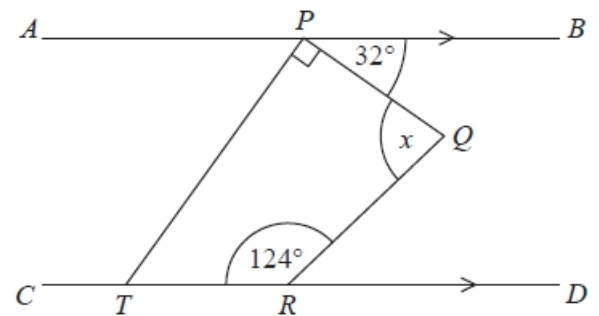
(c) On the diagram, mark with a cross (x) the position of the school. Label your cross S.

(2)

(Total for Question is 5 marks)

Q47. APB is parallel to $CTRD$.
 $PQRT$ is a quadrilateral.

Work out the size of the angle marked x .
 You must show your working.



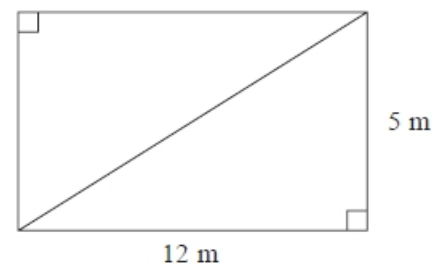
.....°

(Total for question = 4 marks)

Q48. This rectangular frame is made from 5 straight pieces of metal.

The weight of the metal is 1.5 kg per metre.

Work out the total weight of the metal in the frame.



..... kg

(Total for question = 5 marks)

Q49. Deniz has a 4-sided spinner. The sides of the spinner are numbered 1, 2, 3 and 4

The spinner is biased.

The table shows each of the probabilities that the spinner will land on 1, on 3 and on 4

The probability that the spinner will land on 3 is x .

Number	1	2	3	4
Probability	0.3		x	0.1

(a) Find an expression, in terms of x , for the probability that the spinner will land on 2 Give your answer in its simplest form.

(2)

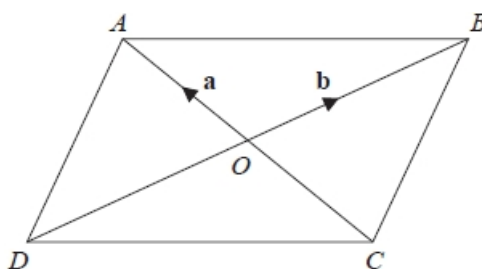
Deniz spins the spinner 300 times.

(b) Write down an expression, in terms of x , for the number of times the spinner is likely to land on 3

(1)

(Total for Question is 3 marks)

Q50. (unlikely to come up like this but it's a nice challenge if you've not done this! Mel)



ABCD is a parallelogram.

The diagonals of the parallelogram intersect at O.

$\vec{OA} = \mathbf{a}$ and $\vec{OB} = \mathbf{b}$

(a) Find, in terms of \mathbf{b} , the vector \vec{DB} .

(1)

(b) Find, in terms of \mathbf{a} and \mathbf{b} , the vector \vec{AB} .

(1)

(c) Find, in terms of \mathbf{a} and \mathbf{b} , the vector \vec{AD} .

(1)

(Total for question = 3 marks)