

Please write clearly, in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

GCSE MATHEMATICS

F

Foundation Tier

Paper 2 Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- mathematical instruments.
- a calculator.



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

For Examiner's Use

Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8 - 9	
10 - 11	
12 - 13	
14 - 15	
16 - 17	
18 - 19	
20 - 21	
22	
TOTAL	

- 1 Work out the number of grams in 1.5 kilograms.

[1 mark]

Answer _____ g

- 2 Write down the value of $\frac{10}{5}$

[1 mark]

Answer _____

- 3 Solve $3x = 12$

[1 mark]

$x =$ _____

- 4 Work out the number 10 times bigger than $\frac{7}{100}$

Give your answer as a decimal.

[2 marks]

Answer _____

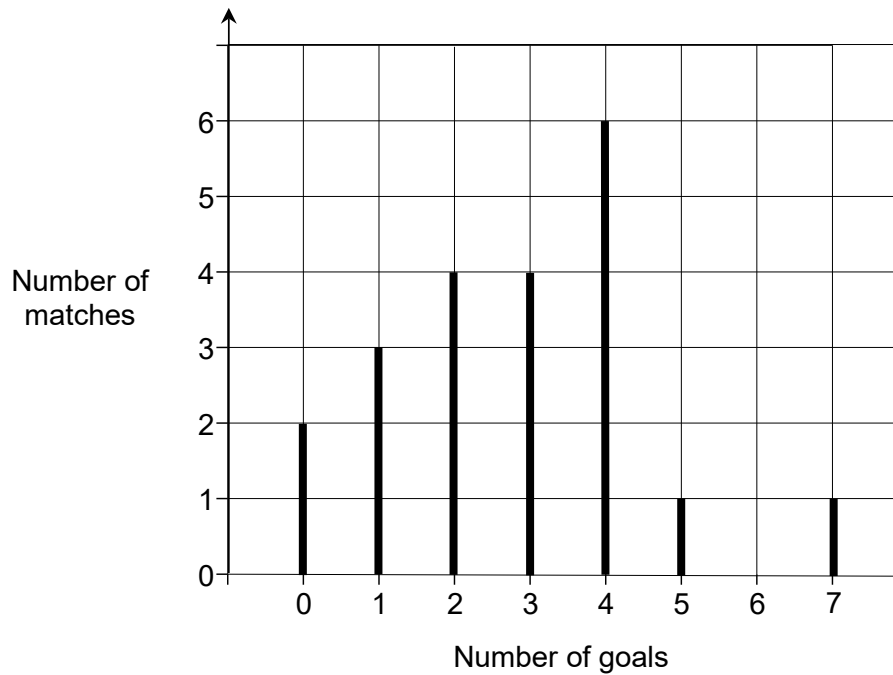
5

Write down **all** the factors of 12**[2 marks]**

Answer _____

Turn over for the next question**Turn over ►**

- 6** The line graph shows the number of goals scored by a hockey team.



- 6 (a)** What is the mode of the number of goals?

[1 mark]

Answer _____

- 6 (b)** How many matches did the hockey team play altogether?

[2 marks]

Answer _____

- 6 (c)** In one of the matches, this team won by 6 goals.
What was the score in that match?

[1 mark]

Answer _____

- 7** A hotel charges
£48 per night for a room
£6.50 for breakfast
£14 for an evening meal.

Liz stays at the hotel for 4 nights.
She has 3 breakfasts and 1 evening meal.

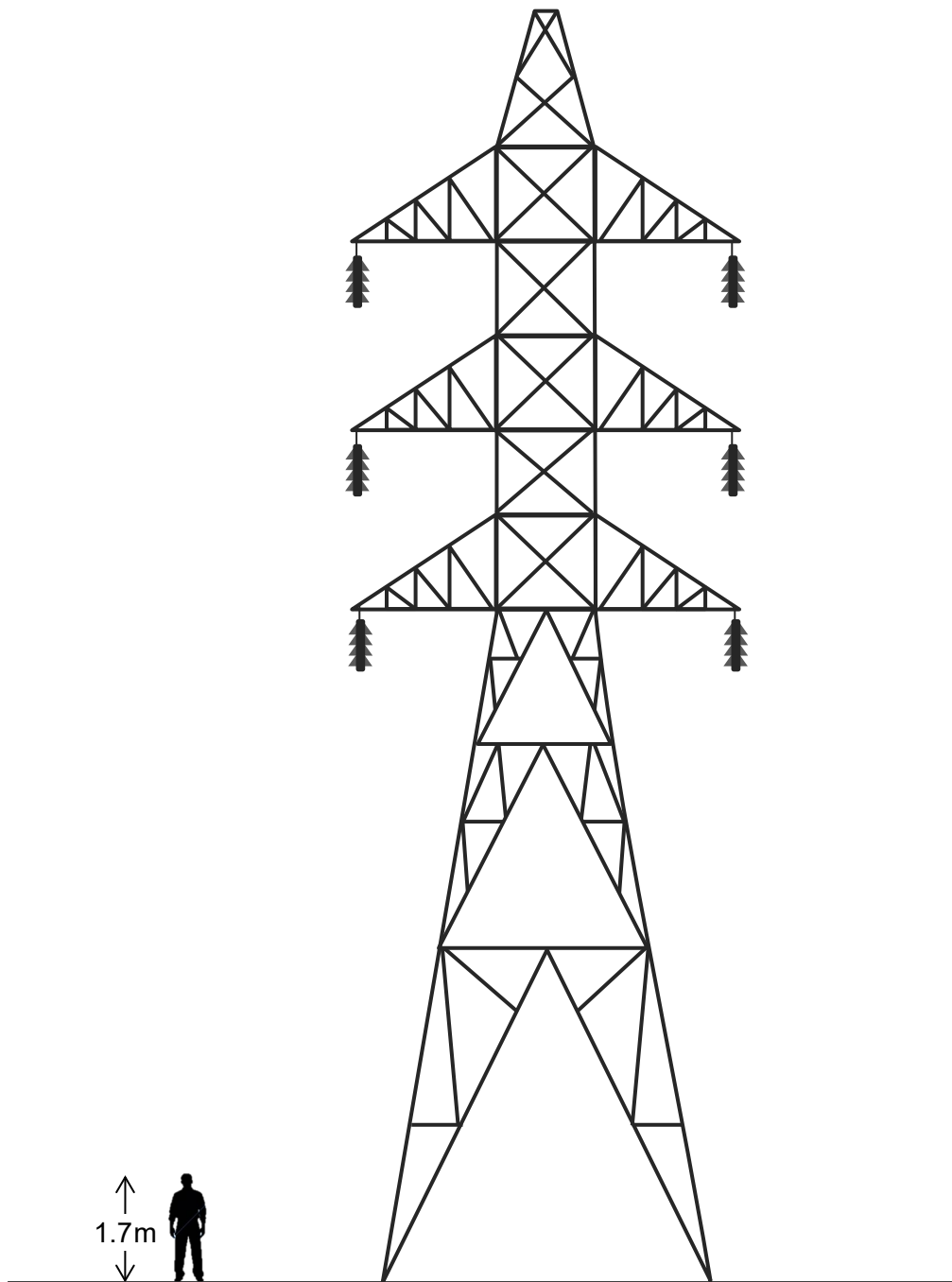
How much does she pay altogether?

[4 marks]

Answer £ _____

Turn over for the next question

8

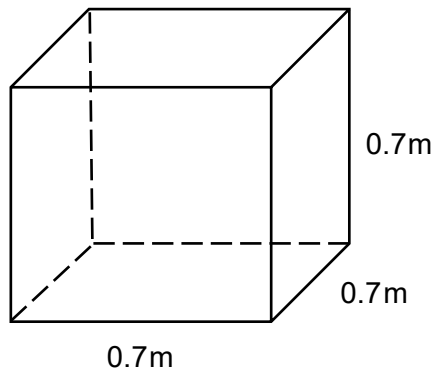


Use the height of the man to estimate the height of the pylon.

[2 marks]

Answer _____ m

- 9 A cube has edges of length 0.7 metres.



Work out the volume of the cube.

[2 marks]

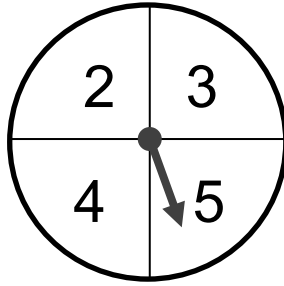
Answer _____ m^3

- 10 Three whole numbers have a total of 50
The first number is a multiple of 15
The second number is nine times the third number.
Work out the three numbers.

[3 marks]

Answer _____ , _____ , _____

- 11 A game is played with a fair spinner.



The player spins the spinner twice.

The score is the **difference** between the two numbers.

- 11 (a) Complete the table to show the scores.

[2 marks]

		First spin			
		2	3	4	5
Second spin	2			2	
	3				
	4	2			
	5				

- 11 (b)** The player **loses** if the score is 0 or 1
The player **wins** if the score is 2 or 3

Amy says,

“Two scores win and two scores lose, so the chance of winning is evens.”

Is Amy correct?

Tick a box.

Yes

☐

No

☐

Give a reason for your answer.

[2 marks]

Turn over for the next question

12 Ang's pay is £390 per week.

They work for $37\frac{1}{2}$ hours per week.

12 (a) Work out their **hourly** rate of pay.

[2 marks]

Answer £ _____

12 (b) Ang wants to work out their pay for **March**.

They say,

"There are 4 weeks in March, so I will multiply £390 by 4

$£390 \times 4 = £1560$ "

Does their method give the correct amount for their monthly pay?

Tick a box.

☐

No, the pay for
March is more

☐

Yes

☐

No, the pay for
March is less

Show working to support your answer.

[2 marks]

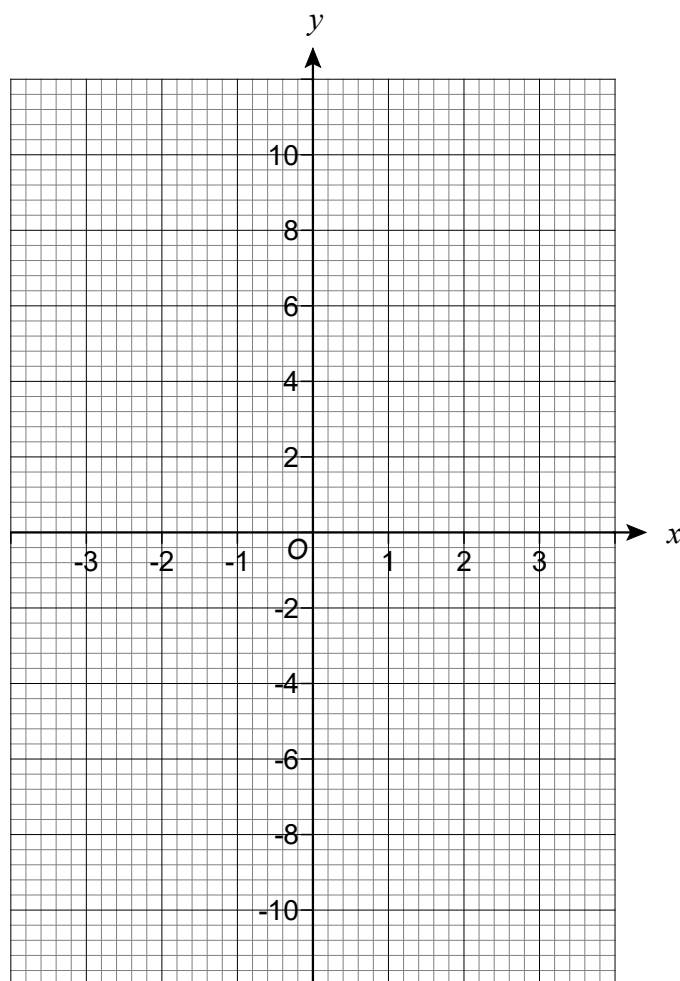
13 (a) Complete the table for $y = 2x + 3$

[2 marks]

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

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

[2 marks]



13 (c) Solve $x = 2x + 3$

[2 marks]

$x =$ _____

14

In March, Kim pays the same amount for each song she downloads.

She pays £59.40 for 60 songs.

In April, she pays 5p **more** for each song.

She has a £20 voucher.

What is the **maximum** number of songs she can download using the voucher?

[3 marks]

Answer _____

15

I am thinking of a two-digit square number.

Its digits add up to a prime number.

Write down a square number that I could be thinking of.

[2 marks]

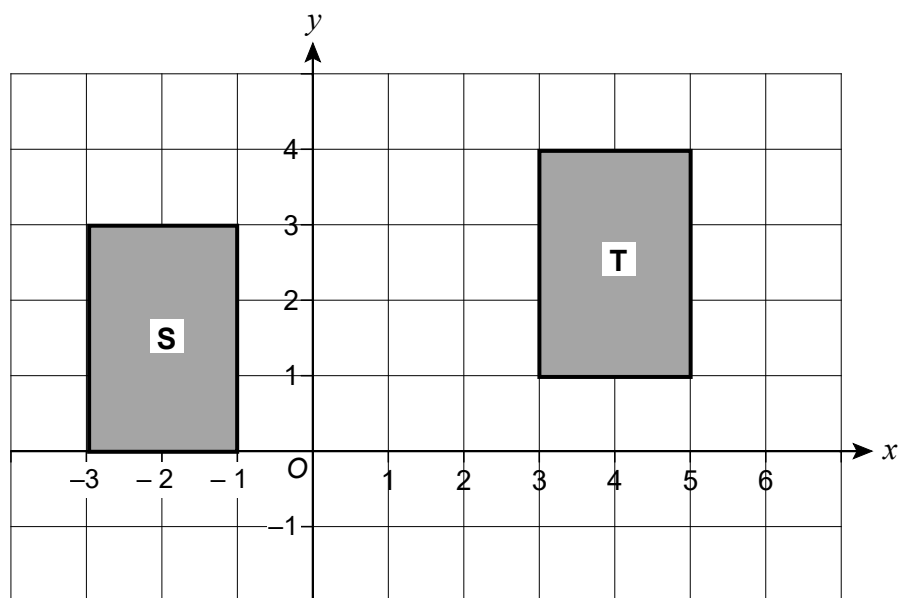
Answer _____

16 Increase 5400 by 27%

[2 marks]

Answer _____

17



Work out the vector that translates shape **S** to shape **T**

[1 mark]

Answer $\begin{pmatrix} \\ \end{pmatrix}$

18

Toilet rolls come in packs of 4 and 9



£1.95



£4.48

Which pack is better value?

You **must** show your working.**[3 marks]**

Answer _____

19

Write 300 as a product of its prime factors.

[2 marks]

Answer _____

20

60 people took a test.

Before the test, they predicted whether they would pass or fail.

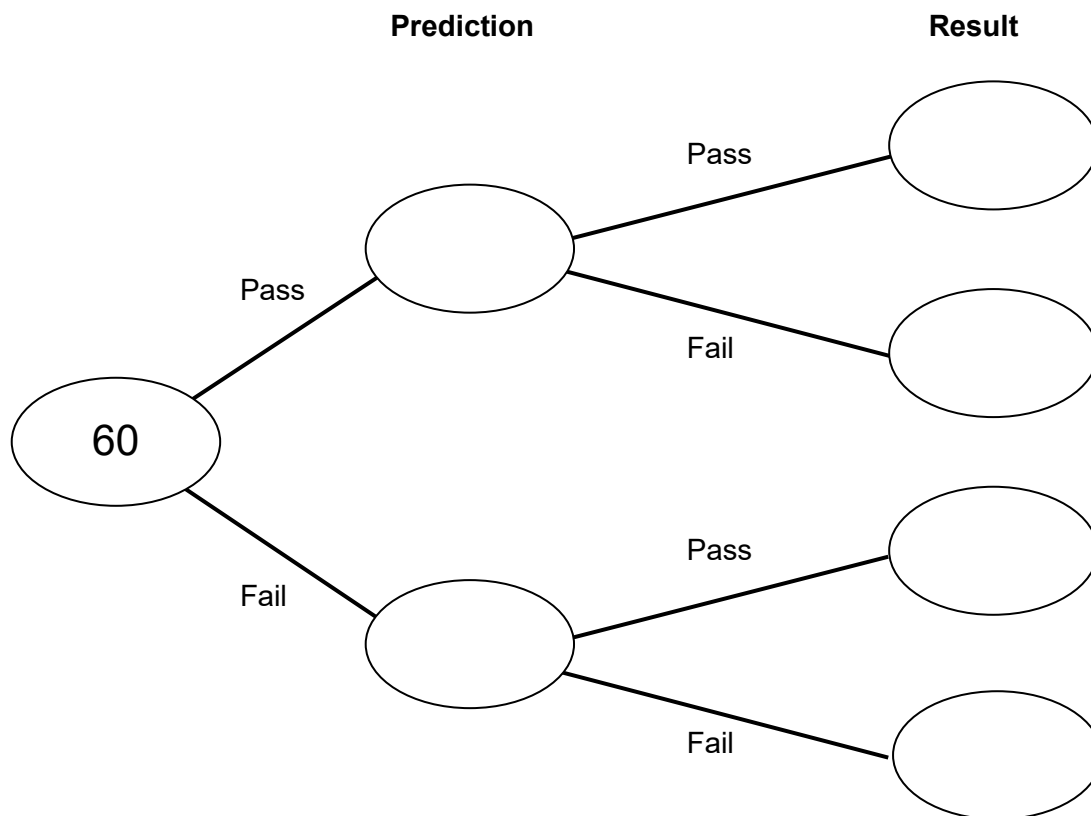
40 people predicted they would pass.

32 of the people who predicted they would pass did pass.

51 people passed altogether.

Complete the frequency tree.

[2 marks]

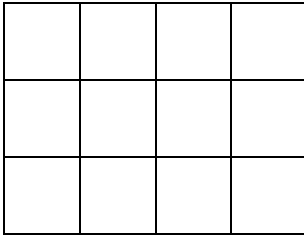


Turn over for the next question

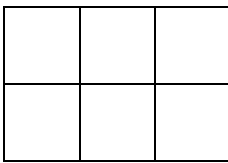
21

A solid cuboid is made from **centimetre cubes**.

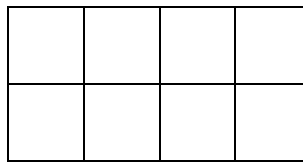
The plan view, front elevation and side elevation are shown.



Plan view



Front elevation



Side elevation

How many cubes were used to make the cuboid?

[2 marks]

Answer _____

22

The table shows information about journeys A and B.

Complete the table.

[2 marks]

	Distance travelled	Time taken	Average speed
A	14 miles		56 mph
B		1 hour 20 minutes	39 mph

23

Here are two column vectors.

$$\mathbf{f} = \begin{pmatrix} 4 \\ 2 \end{pmatrix} \quad \mathbf{g} = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$$

Work out $4\mathbf{f} - 3\mathbf{g}$

[2 marks]

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

Turn over for the next question

- 24** The times that 60 customers waited at a supermarket checkout are shown.

Time, t (minutes)	Frequency
$0 \leq t < 2$	18
$2 \leq t < 4$	10
$4 \leq t < 6$	16
$6 \leq t < 8$	12
$8 \leq t < 10$	4

- 24 (a)** Write down the class interval that contains the median.

[1 mark]

Answer _____

- 24 (b)** The manager of the supermarket says,

“Over 90% of our customers wait less than eight minutes.”

Does the data support this statement?

Yes.

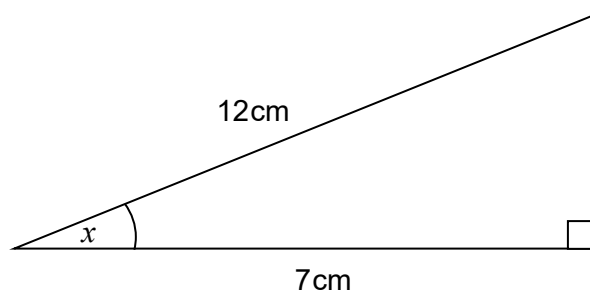
☐

No

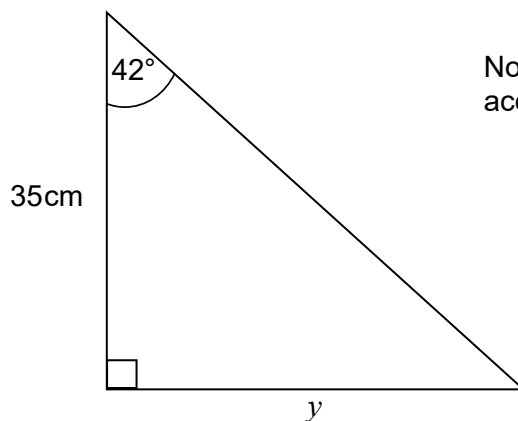
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You **must** show your working.

[2 marks]

25 (a) Work out the size of angle x **[3 marks]**Not drawn
accurately

Answer _____ degrees

25 (b) Work out length y **[3 marks]**Not drawn
accurately

Answer _____ cm

26

Expand and simplify $(y + 8)(y - 3)$

[2 marks]

Answer _____

27

Tomas ran a Lucky Dip stall.

LUCKY DIP

Tickets 50p

Tickets ending 88 win £10

Tickets ending 9 win £2

There were 800 tickets, numbered 1 to 800

Tomas sold **all** the winning tickets and **some** of the losing tickets.

He made a profit of £155

How many **losing** tickets did he sell?

[5 marks]

Answer _____

28

The value of a second-hand car is £9000

Each year it loses 20% of its value at the start of that year.

Work out its value in four years time.

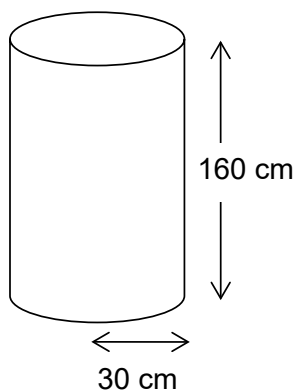
[3 marks]

Answer £ _____

Turn over for the next question

29

A water tank is a cylinder with radius 30 cm and depth 160 cm.



It is filled at the rate of 0.1 litres per second.

1 litre = 1000 cm³

Does it take longer than 1 hour to fill the tank?

You **must** show your working.

[4 marks]

Answer _____

END OF QUESTIONS

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