

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

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

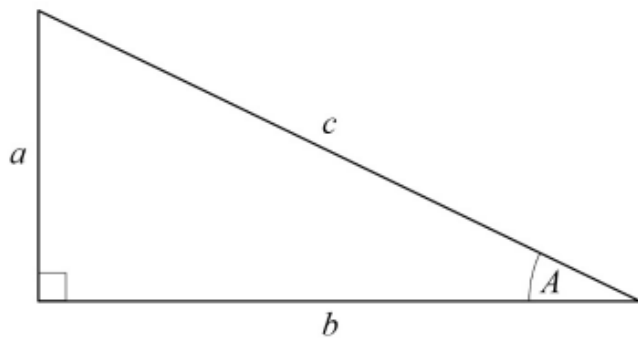
Volume of a prism = area of cross section \times length

Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a , b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a , b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

$$\text{Total accrued} = P \left(1 + \frac{r}{100} \right)^n$$

Probability

Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

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 $3x = 12$

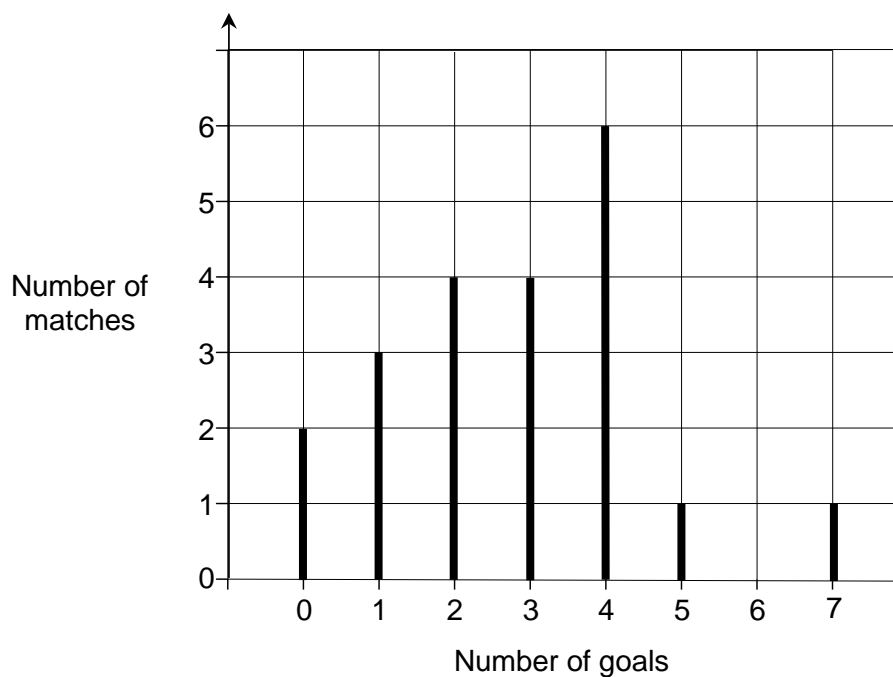
[1 mark]

$x =$ _____

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

Answer _____

5 The line graph shows the number of goals scored by a hockey team.



5 (a) What is the mode of the number of goals?

[1 mark]

Answer _____

5 (b) How many matches did the hockey team play altogether?

[2 marks]

Answer _____

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

[1 mark]

Answer _____

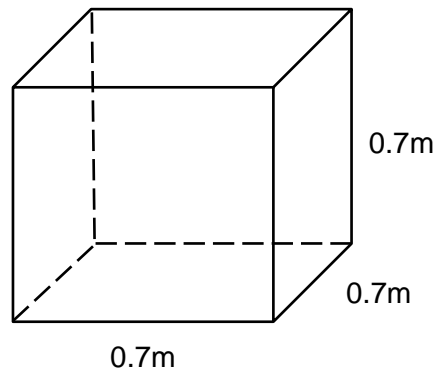
6 A hotel charges
£48 per night for a room
£6.50 for breakfast
£14 for an evening meal.
Liz stays at the hotel for 4 nights.
She has 3 breakfasts and 1 evening meal.
How much does she pay altogether?

[4 marks]

Answer £ _____

7

A cube has edges of length 0.7 metres.

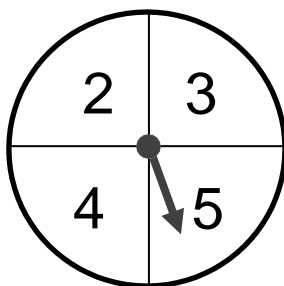


Work out the volume of the cube.

[2 marks]

Answer _____ m³

8 A game is played with a fair spinner.



The player spins the spinner twice.

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

8 (a) Complete the table to show the scores.

[2 marks]

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

- 8 (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]

9 Ang's pay is £390 per week.
They work for $37\frac{1}{2}$ hours per week.

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

[2 marks]

Answer £ _____

9 (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 × 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]

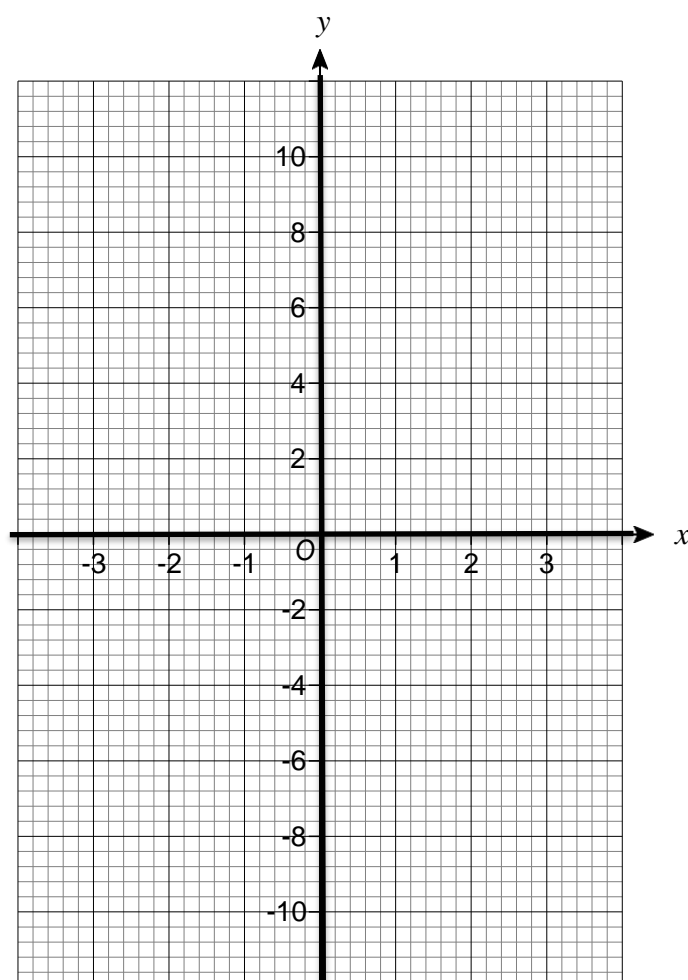
10 (a) Complete the table for $y = 2x + 3$

[2 marks]

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

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

[2 marks]



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

[2 marks]

$x =$ _____

11

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 _____

12

Increase 5400 by 27%

[2 marks]

Answer _____

13 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]

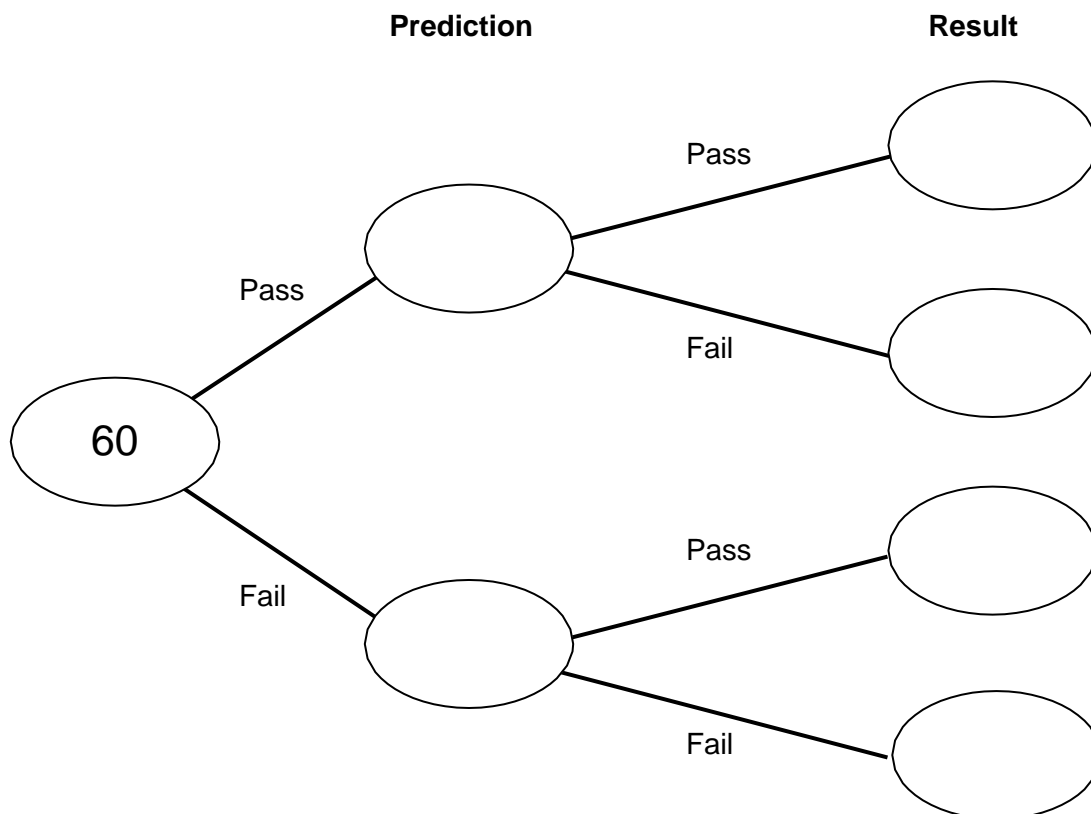
Answer _____

14 Write 300 as a product of its prime factors.

[2 marks]

Answer _____

- 15** 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]**



16

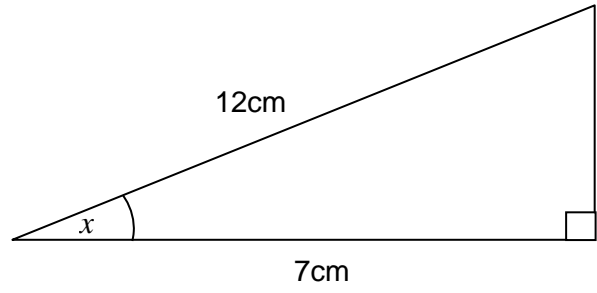
The table shows information about journeys A and B.
Complete the table.

[2 marks]

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

17 (a) Work out the size of angle x

[3 marks]

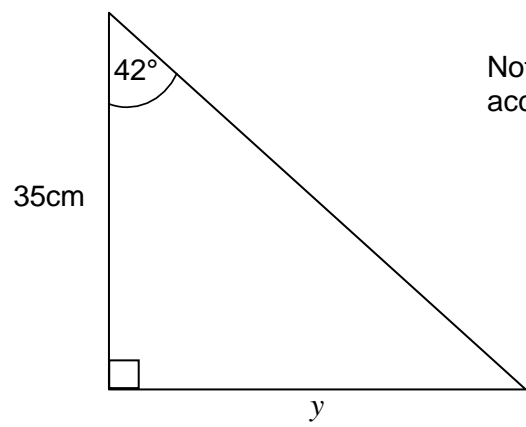


Not drawn accurately

Answer _____ degrees

17 (b) Work out length y

[3 marks]



Not drawn accurately

Answer _____ cm

18

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

[2 marks]

Answer _____

END OF QUESTIONS