

Foundation Maths Activities

Mat 1

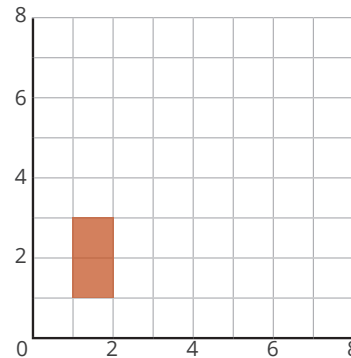
1 At a restaurant, the menu has two different starters, three different main courses and two different puddings.

If Anna orders a starter, a main and a pudding, how many different combinations of meal could she order?

2 Simplify: $\frac{5x + 25}{5}$

3 A car travels 20km in 15 minutes.
Find its speed in km/h.

4 Enlarge the rectangle by a scale factor of 2, using (0, 0) as the centre of enlargement.



5 The table gives information about the probability of picking a blue, red or green counter when picking at random from a bag which contains only blue, red and green counters:

Colour	Blue	Red	Green
Probability	0.2	0.4	

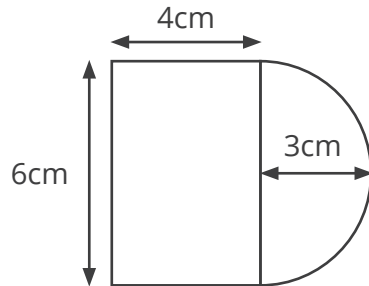
- Find the probability of picking out a green counter.
- If there are 20 counters altogether, how many of the counters are red?

6 Simplify fully:

- $x^3 \times x^7$
- $x^9 \div x^3$
- $(x^5)^4$

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1 This compound shape is made up of a semi-circle and rectangle. Find its total area, giving your answer in terms of π .



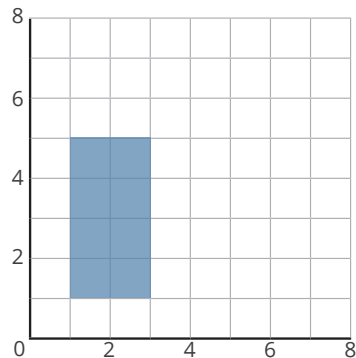
3 Factorise:
 $3xy^2 + 9x^2y$

4 A 4-sided spinner, numbered 1 to 4, is spun and a 6-faced dice, numbered 1 to 6, is thrown. Using the probability space diagram to help you, find the probability that the total score from the spinner and the dice is 7.

	Spinner Score			
Dice Score	1	2	3	4
1				
2				
3				
4				
5				
6				

5 A right angled triangle has two shorter sides of length 5cm and 12cm. Find the length of the longest side.

2 Reflect the rectangle in the line $y = x$



6 Paula completes her morning cycle ride at an average speed of 36km/h. What is this speed measured in m/s?

Foundation Maths Activities

Mat 3

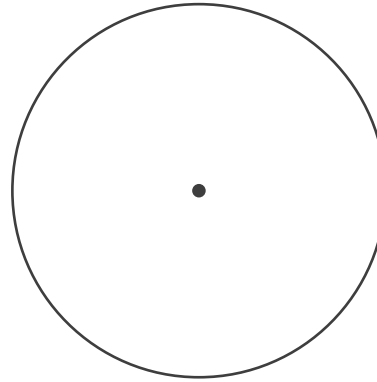
a. Write as an ordinary number:
 4.64×10^7

1

b. Write in standard form:
 0.00093

In this diagram, draw and clearly label a radius, diameter, sector, segment and tangent.

3



The table shows the shoe sizes of 20 children at a youth club:

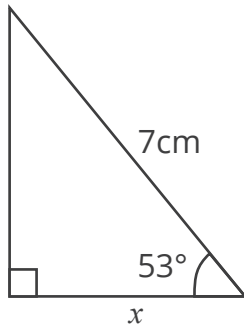
6

Shoe Size	Frequency
3	1
4	10
5	2
6	4
7	2
8	1

You may use a calculator for this question only.

2

Find the length of the side marked x . Give your answer correct to 2 decimal places.



Simplify fully:
 $-2x + 5y - 3x - y$

4

x is directly proportional to y .
 When $x = 3$, $y = 75$. Find the value of y when $x = 5$.

5

a. What is the mean shoe size of the children?

b. What is the modal shoe size?

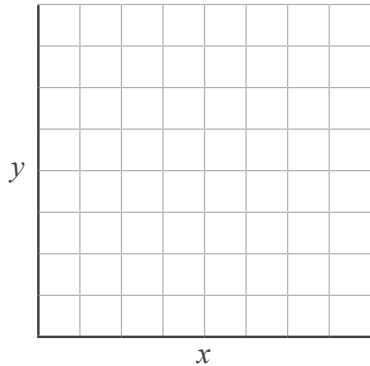
c. What is the median shoe size?

d. What is the range of the shoe sizes?

Foundation Maths Activities

Mat 4

1 On the axes below, sketch the graph that illustrates that x is proportional to y .



3 a. Write as a fraction: 0.7

b. Write as a decimal: $\frac{7}{20}$

5 The following is a list of shoe sizes of the workers in an office:

3, 8, 2, 5, 5, 7, 6

a. What is the median shoe size?

b. Is shoe size continuous or discrete data?

4 A cylinder is placed on a flat horizontal surface with one of its circular faces on the horizontal surface. Draw the plan and front elevation.

Plan:

Front elevation:

2 Of the following, which is a formula, which is an expression and which is an equation?

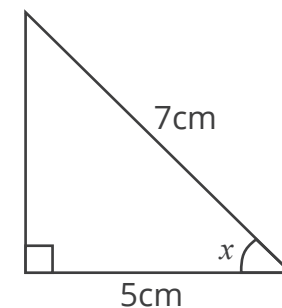
a. $2x + 3 = 8$

b. $A = l \times w$

c. $3x + 5y$

6 You may use a calculator for this question only.

Find the size of the angle marked x . Give your answer correct to 2 decimal places.

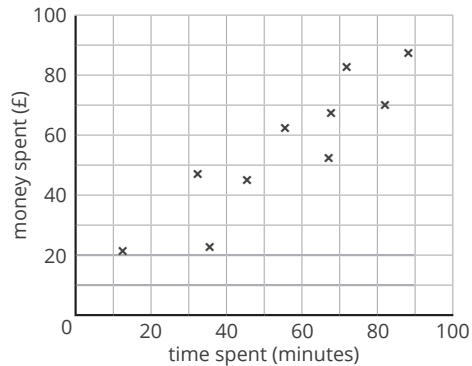


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Two of the lines given by the equations below are perpendicular. Give their letters:

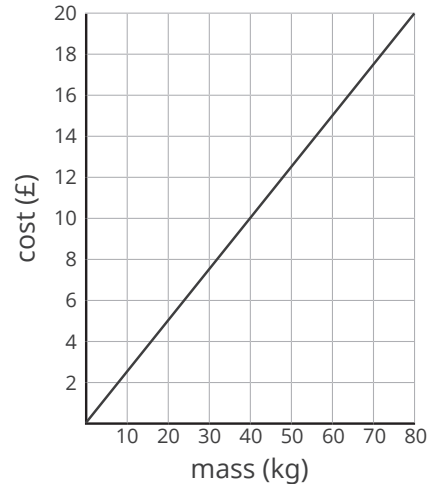
- A. $y = 2x + 3$ C. $y + \frac{x}{2} - 3 = 0$
 B. $y + 2x = 3$ D. $y + 2x = 8$

The scatter graph shows the amount of time that 10 shoppers spent in the supermarket one morning against the amount of money they spent.



What is the relationship between time spent and money spent in the supermarket?

The graph shows the price charged for a delivery of a parcel, given its mass.



- Find the gradient.
- What information does the gradient give you about the parcel delivery?

Give the vector which describes a movement of 3 units up and 4 to the left.

The bearing of the cafe from the school in Bearsville is 048° . Draw a sketch to show this information; your sketch does not need to be accurately drawn, but it should have relevant angles and the North direction labelled.

£75 is shared out between Emily, Felix and Sophie in the ratio 2:3:10.

- How much money does each receive?
- What fraction of the money does Sophie get?

Foundation Maths Activities

Mat 6

1 Rounded to the nearest mile, Ryan runs 4 miles. Complete the error interval for the distance, d , that he runs:

$$\text{---} \leq d < \text{---}$$

3 Five numbers have a median of 5 and a range of 7. What could the numbers be?

5 An isosceles triangle has two sides of length 8cm and another of length 4cm. A similar triangle has two sides of length 24cm; what is the length of the third side?

2 Find the area of a circle of radius 5cm. Give your answer in terms of π .

4 £3000 is invested for 2 years at a compound interest rate of 5%. How much money will be in the account at the end of this period?

6 I think of a number, double it then square the result; this gives 36. What is the number I first thought of?