Day 154 **A Tier 10-a-day**

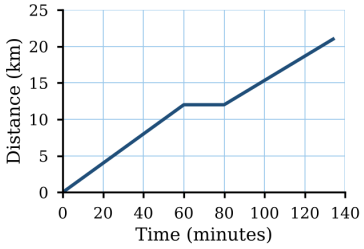
1 (a) Write 0.000036 in standard form.
(b) Write 3.4×10^5 as an ordinary number.

2 A coach travels 180 km in 2 hours 15 minutes.
Work out the average speed in km/h.

3 y is inversely proportional to x.
When x = 1, y = 5.
(a) Find a formula for y in terms of x.
(b) Work out the value of y when x = 5.

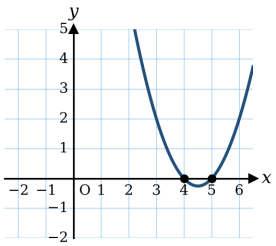
4 Work out the value of
(a) $1000^{\frac{-1}{3}}$
(b) $100^{\frac{1}{2}}$

5 A runner makes a journey. The distance-time graph shows the journey.
(a) For how many minutes did the runner stop?
(b) Work out the speed during the final part of the journey. Give your answer in km/h.

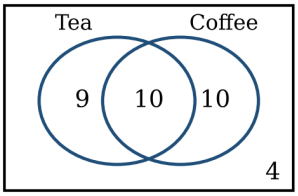


Day 154 **A Tier 10-a-day**

6 The diagram shows the graph of $y = x^2 + bx + c$.
Find the value of b and the value of c.



7 The Venn diagram shows information about 33 people.
One person is chosen at random.
(a) The person is in set Tea. Find the probability that they are also in set Coffee.
(b) The person is not in set Coffee. Find the probability that they are in set Tea.



8 A cone has height 17 cm and base radius 9 cm.
Work out the volume of the cone. Give your answer in terms of π.

9 Rationalise the denominator of $\frac{12}{3-\sqrt{6}}$

Give your answer in the form $a + b\sqrt{c}$ where a and b are integers.

10 A square and a regular decagon share the side AB and are on opposite sides of it.
The two shapes meet at the point A.
Work out the size of the angle at A that is not inside either shape.