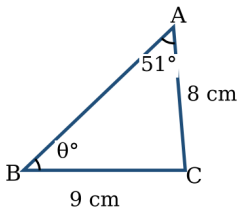
Day 230 **S Tier 10-a-day**

1 The interior angles of a pentagon are
$x°$, $(x - 5)°$, $(x + 10)°$, $(x - 20)°$, $(x + 30)°$
(a) Work out the value of x.
(b) Work out the size of the largest angle.

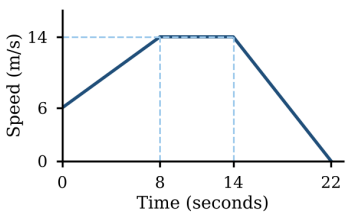
2 Work out $(4.32 \times 10^{4}) \div (1.6 \times 10^{-1})$
Give your answer in standard form.

3 (a) Write $x^2 + 2x + 7$ in the form $(x + p)^2 + q$
(b) Write down the coordinates of the turning point of the curve $y = x^2 + 2x + 7$

4 The diagram shows triangle ABC. (Calculator)
Angle BAC = 51° and angle ABC is acute.
Work out the size of angle ABC, marked θ.
Give your answer correct to 1 decimal place.
The diagram is not drawn accurately.

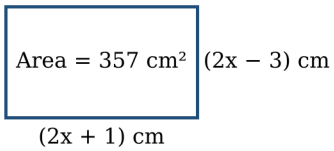


5 The graph shows the speed of a train during 22 seconds.
(a) Work out the acceleration during the first 8 seconds.
(b) Work out the average speed over the whole 22 seconds.



Day 230 **S Tier 10-a-day**

6 The diagram shows a rectangle of length (2x + 1) cm, width (2x − 3) cm and area 357 cm^2.
(a) Show that $4x^2 - 4x - 360 = 0$.
(b) Work out the length of the diagonal of the rectangle. Give your answer correct to 3 significant figures.



7 The point P(6, −3) lies on the graph of y = f(x). Write down the coordinates of the image of P on the graph of
(a) y = −f(x) (b) $y = \frac{1}{2}f(x)$

8 Show that $0.7\dot{6}\dot{8} = \frac{761}{990}$

9 The probability that it rains on a day is 0.3.
If it rains, the probability that Ali is late for school is 0.3.
If it does not rain, the probability that Ali is late is 0.1.
(a) Work out the probability that Ali is late.
(b) Ali is late. Work out the probability that it rained.

10 Simplify fully $\frac{x^2 + 7x + 10}{x - 3} \div \frac{x + 2}{x^2 + x - 12}$