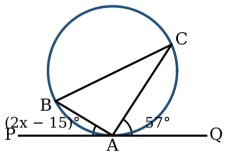
Day 208	S Tier 10-a-day

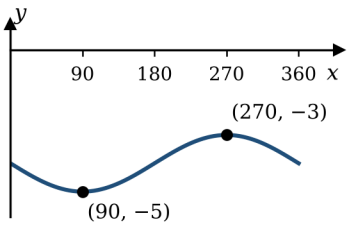
1 Hassan changes £700 into dollars at £1 = $1.18.
Hassan spends $570 and then changes the rest back into pounds at £1 = $1.25.
How many pounds does Hassan get back?

2 Without using a calculator, work out $0.\dot{8}\dot{5} \times 0.\dot{5}\dot{6}$
Give your answer as a fraction in its simplest form.

3 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = (2x − 15)°, angle ACB = (x + 8)° and angle CAQ = 57°.
(a) Work out the value of x.
(b) Work out the size of angle BAC.
The diagram is not drawn accurately.



4 The diagram shows the graph of y = a sin x° + c for 0 ≤ x ≤ 360.
Some points on the graph are labelled.
Find the value of a and the value of c.

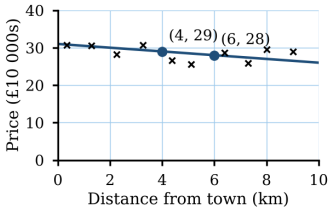


5 Here are five numbers: 2x − 1, x + 6, 2x + 4, 2x + 6, x − 2.
The mean of the five numbers is 17.
(a) Work out the value of x.
(b) Work out the median of the five numbers.

Day 208 **S Tier 10-a-day**

6 The nth term of a sequence is $n^2 + 4n + 1$.
(a) Work out the 12th term.
(b) Is 399 a term of the sequence? You must show your working.

7 The scatter graph shows distance from town (x) and price (y).
The line of best fit passes through (4, 29) and (6, 28).
(a) Find its equation in the form y = mx + c.
(b) Explain what its gradient tells you.

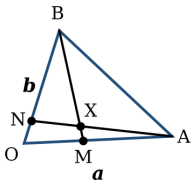


8 Here are six numbers.

$(1 + \sqrt{2})^2$, $(2 + \sqrt{5})(2 - \sqrt{5})$, $2\pi - \pi$, $\frac{\sqrt{18}}{\sqrt{2}}$, $0.\dot{4}$, $\sqrt{2} + \sqrt{8}$

Write down the rational numbers.

9 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 2 : 3. N is on OB with ON : NB = 1 : 4. AN and BM intersect at X.
(a) Find BM in terms of **a** and **b**.
(b) Find OX in terms of **a** and **b**.
The diagram is not drawn accurately.



10 Solve $\frac{1}{x+2} - \frac{2}{x+5} = \frac{1}{2}$