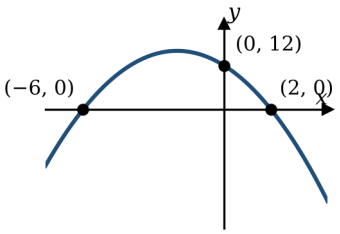
Day 219	S Tier 10-a-day

1 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.

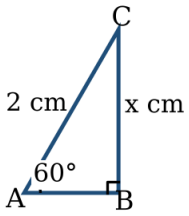


2 A and B are two events.
P(A) = 0.6, P(B) = 0.7 and P(A or B) = 0.95
(a) Work out P(A and B).
(b) Are A and B independent? You must show your working.

3 Given that $\frac{25^5 \times 25^4}{5^2} = 5^n$,
find the value of n.

4 A biased wheel stops on one of four outcomes with these probabilities.
A: 3x; B: x + 0.1; C: x + 0.1; D: 0.55
(a) Work out the value of x.
(b) The biased wheel is used 40 times. Work out an estimate for the number of times it stops on A.

5 Prove that the product of any two consecutive even numbers is a multiple of 8.

Day 219	S Tier 10-a-day
6 The price of a laptop is increased by 25%. The new price is then decreased by 12%. The new price is then increased by 15%. The final price is £1,416.80. Work out the original price of the laptop.	
7 ABC is a right-angled triangle. Work out the exact value of x. Give your answer in its simplest form. The diagram is not drawn accurately. 	
8 Solve $x^4 - 45x^2 + 324 = 0$	
9 The graph of $y = f(x)$ has a maximum point at $(-3, -4)$. Write down the coordinates of the turning point of the graph of (a) $y = f(x + 4)$ (b) $y = f(x - 1) + 5$	
10 Find the smallest positive integer k such that $21 \times k$ is a square number.	