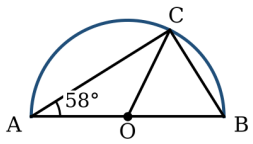
Day 120 **IGCSE 10-a-day**

1 Here are the first five terms of a quadratic sequence.
5, 3, −3, −13, −27
Find an expression for the nth term.

2 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 58°.
(a) Work out the size of angle ACB.
(b) Work out the size of angle COB.
The diagram is not drawn accurately.



3 Work out $(2\sqrt{5})^2 - (4\sqrt{5})^2$

4 A curve has equation $y = 2x^3 + 9x + 9$.
(a) Show that the curve has no stationary points.
(b) Find the least value of the gradient of the curve.

5 $V = ab^n$, where a and b are positive constants. When n = 2, V = 2880. When n = 4, V = 4147.2. Find the values of a and b, and the value of V when n = 6.

Day 120	IGCSE 10-a-day
6 Triangle P has vertices A(4, 10), B(2, 4) and C(8, 4). Triangle Q has vertices A'(4, 1), B'(5, 4) and C'(2, 4). Q is an enlargement of P. Describe fully the single transformation that maps P onto Q.	
7 The mean of 9 numbers is 36. One of the numbers, 45, is removed. Work out the mean of the remaining 8 numbers.	
8 The point A lies on the curve $y = -x^2 + 6x + 7$ where $x = 2$. Find the equation of the normal at A. Give your answer in the form $ax + by + c = 0$ where a, b and c are integers.	
9 P is directly proportional to the square of v and inversely proportional to t. When $v = 4$ and $t = 2$, $P = 8$. Work out the value of P when $v = 4$ and $t = 4$.	
10 $y = 2x^3 - 24x + 5$ At the point where $x = -3$, is the curve increasing or decreasing? You must show your working.	