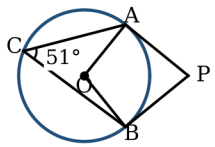
Day 289	IGCSE 10-a-day
1 A curve has equation $y = -x^2 + 5x - 5$. The gradient at the point P on the curve is 11. Find the coordinates of P.	
2 The mean of 10 numbers is 173. One number is removed and the mean of the remaining 9 numbers is 187. Work out the number that was removed.	
3 $f(x) = -4x^{5/2} - x + 6x^{-3/2}$ Find $f'(x)$ and work out the value of $f'(9)$.	
4 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle ACB = 51°. (a) Work out the size of angle AOB. (b) Work out the size of angle APB. The diagram is not drawn accurately. 	
5 Given that $\sqrt{48} + \sqrt{27} = \sqrt{n}$, find the value of n.	

Day 289	IGCSE 10-a-day
6 The position vectors of A and B are $\begin{pmatrix} -6 \\ 1 \end{pmatrix}$ and $\begin{pmatrix} 7 \\ 2 \end{pmatrix}$. (a) Write down the vector $\mathbf{AB}$. (b) Find $\lvert\mathbf{AB}\rvert$, giving the answer as a surd in simplest form if it is not exact.	
7 Make t the subject of $T(t + 2) = t - T$	
8 x is an obtuse angle and $\sin x = \frac{6}{11}$. (a) Find the exact value of cos x. (b) Find the exact value of tan x. Give each answer as a fraction or a surd. Do not use a calculator.	
9 A bag contains 7 blue and 7 green counters. Two counters are taken at random without replacement. Work out the probability that the two counters are the same colour.	
10 The curve $y = 3x^2 - x - 2$ crosses the y-axis at the point A. The tangent to the curve at A meets the x-axis at B. Find the coordinates of B.	