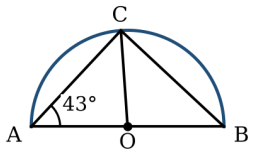
Day 14	IGCSE 10-a-day
1 The graph of $y = 3x^2 + 18x - 3$ has a turning point at P. Find the equation of the tangent to the curve at P.	
2 A bag contains 3 green, 7 blue and 2 red beads. Two beads are taken at random without replacement. Work out the probability that at least one is green.	
3 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 43°. (a) Work out the size of angle ACB. (b) Work out the size of angle COB. The diagram is not drawn accurately. 	
4 The ratio of juniors to seniors in a school is 5 : 4. 30% of the juniors and 75% of the seniors play a sport. What percentage of all of these students play a sport?	
5 $y = 4x + \frac{64}{x}$ Find the coordinates of the stationary points and determine whether each is a maximum or a minimum.	

Day 14	IGCSE 10-a-day
6 Write $\frac{14}{2+\sqrt{3}}$ in the form $p + q\sqrt{3}$ where p and q are integers.	
7 A rectangle has area 57 cm^2, correct to 2 significant figures. Its length is 6.900000000000000355271367880050092935621337890625 cm, correct to 2 significant figures. Work out the upper bound of the width of the rectangle. Give your answer correct to 3 significant figures. (Calculator)	
8 A curve has equation $y = x^3 - 6x^2 + 9x + 3$. Find the coordinates of the stationary points of the curve.	
9 The point P(12, −2) lies on the graph of y = f(x). Write down the coordinates of the image of P on the graph of (a) y = f(2x) (b) $y = \frac{1}{2}f(x)$	
10 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 3 cm, top radius 4 cm and base radius 8 cm. Work out the volume of the frustum. Give your answer in terms of π. 