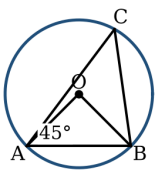
Day 319	S Tier 10-a-day
1 The interior angles of a pentagon are $x°$, $(x - 10)°$, $(x + 10)°$, $(2x - 20)°$, $(x + 20)°$ (a) Work out the value of x. (b) Work out the size of the largest angle.	
2 Zip Taxis has a fixed charge of £3.50 plus £4.50 per mile. Go Cabs has a fixed charge of £45.50 plus £1.50 per mile. (a) Work out the number of miles for which the two costs are the same. (b) Which is cheaper for 17 miles, and by how much?	
3 A, B and C are points on a circle, centre O. Angle OAB = 45°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
4 Here are six numbers. $\sqrt{2} + \sqrt{8}$, $(\sqrt{3})^2$, $\frac{\sqrt{20}}{\sqrt{5}}$, $\sqrt{49}$, $2\pi - \pi$, $(\sqrt{6} + 2)(\sqrt{6} - 2)$ Write down the rational numbers.	
5 Here are five numbers: $x + 6$, $x + 4$, 1, $x - 3$, $2x + 2$. The mean of the five numbers is 7. (a) Work out the value of x. (b) Work out the median of the five numbers.	

Day 319	S Tier 10-a-day
6 A is the point (2, −4) and B is the point (0, 2). Find an equation of the perpendicular bisector of AB. Give your answer in the form ax + by = c, where a, b and c are integers.	
7 A car was bought for £1,500. Each year its value decreases by the same percentage. After 2 years it is worth £735. Work out the percentage decrease each year.	
8 Prove algebraically that $k^3 + 17k$ is a multiple of 6 for all integer values of k.	
9 4x = 3y Work out the ratio (5x + 2y) : (4y − 3x) Give your answer in its simplest form.	
10 Solve $5^{3x-1} = 25^{x+4}$	