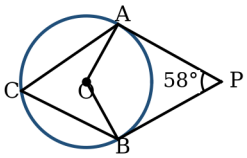
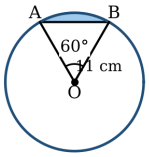
Day 291	S Tier 10-a-day
1 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle APB = 58°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
2 50 fish in a lake are caught, tagged and put back. Later, a second sample of 120 fish is caught. 8 of these are tagged. (a) Work out an estimate for the number of fish in a lake. (b) State one assumption you have made.	
3 FitLife has a joining fee of £2.50 plus £4.50 per month. GymNow has a joining fee of £35.50 plus £1.50 per month. (a) Work out the number of months for which the two costs are the same. (b) Which is cheaper for 19 months, and by how much?	
4 Leila changes £500 into euros at £1 = €1.2. Leila spends €100 and then changes the rest back into pounds at £1 = €1.6. How many pounds does Leila get back?	
5 The circle has centre O and radius 11 cm. A and B are points on the circle and angle AOB = 60°. (Calculator) Work out the area of the shaded segment. Give your answer correct to 3 significant figures. The diagram is not drawn accurately. 	

Day 291	S Tier 10-a-day
6 The product of two positive numbers is 48. The larger number is 2 more than the smaller number. Let the smaller number be n. (a) Show that $n^2 + 2n - 48 = 0$ (b) Work out the two numbers.	
7 x is an acute angle and $\cos x = \frac{2}{11}$. (a) Find the exact value of sin x. (b) Find the exact value of tan x. Give each answer as a fraction or a surd. Do not use a calculator.	
8 The HCF of two numbers is 2 and their LCM is 176. One of the numbers is 22. Work out the other number.	
9 Jamal and Evan share some money in the ratio 7 : 8. Jamal gives Evan £4. The ratio of their money is now 3 : 4. How much money do they have altogether?	
10 A force of 90 N acts on a surface, correct to 1 significant figure. The area of the surface is 6 m^2, correct to the nearest whole number. Work out the upper bound of the pressure. Give your answer correct to 3 significant figures. (Calculator)	