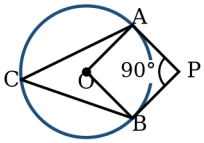
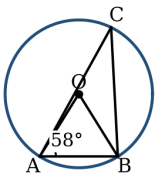
Day 277	S Tier 10-a-day
1 80 deer in a forest are caught, marked and put back. Later, a second sample of 60 deer is caught. 12 of these are marked. (a) Work out an estimate for the number of deer in a forest. (b) State one assumption you have made.	
2 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle APB = 90°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
3 Rationalise the denominator of $\frac{3}{4\sqrt{6}}$ Give your answer in its simplest form.	
4 A, B and C are points on a circle, centre O. Angle OAB = 58°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
5 Sofia drives 10 km at an average speed of 20 km/h. The drive then continues for another 200 km at an average speed of 80 km/h. Work out the average speed for the whole journey.	

Day 277	S Tier 10-a-day
6 The point P(6, 6) lies on the graph of y = f(x). Write down the coordinates of the image of P on the graph of (a) y = f(x + 4) (b) y = −f(x)	
7 Dina read $\frac{2}{7}$ of a book on Saturday. On Sunday she read $\frac{4}{5}$ of the pages that were left. She read 40 pages on Sunday. How many pages are in the book?	
8 Sofia and Priya play a match. The first to win 2 chess games wins the match. The probability that Sofia wins any one of the chess games is $\frac{3}{10}$. Work out the probability that the match needs a third one to decide it.	
9 Make r the subject of $P = \frac{-5r + 1}{r + 2}$	
10 A point A is on level ground in line with the base of a tower. (Calculator) The angle of elevation of the top of the tower from A is 57°. B is a point on the same line, 30 m further from the tower than A. The angle of elevation of the top of the tower from B is 45°. Work out the height of the tower. Give your answer to 1 decimal place.	