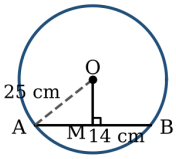
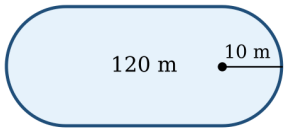
Day 80	S Tier 10-a-day
1 AB is a chord of a circle, centre O. M is the midpoint of AB. (Calculator) (a) Work out the length OM. (b) Work out angle AOB, to 1 decimal place. The diagram is not drawn accurately.  	
2 The mean of 11 numbers is 85. One number is removed and the mean of the remaining 10 numbers is 87.5. Work out the number that was removed.	
3 (a) Write $3x^2 - 12x + 21$ in the form $a(x + p)^2 + q$ (b) Write down the coordinates of the turning point of the curve $y = 3x^2 - 12x + 21$	
4 In a group of visitors, 55% are adults and the rest are children. 20% of the adults and 50% of the children buy a souvenir. What percentage of all the visitors buy a souvenir?	
5 A bag contains 3 orange sweets, 4 purple sweets and 3 pink sweets. Two sweets are taken at random without replacement. Work out the probability that (a) both are the same colour, (b) exactly one is purple.	

Day 80	S Tier 10-a-day
6 A right-angled triangle has hypotenuse 19.9 cm and one other side 6.6 cm, both correct to 1 decimal place. (Calculator) Work out the lower bound of the length of the third side. Give your answer correct to 3 significant figures.	
7 9 workers can build a wall in 15 days. After 5 days, 4 of the workers leave. The rest carry on working at the same rate. How many more days does it take to finish?	
8 Show that the equation $x^2 + kx - 1 = 0$ has two distinct real solutions for all values of k.	
9 The diagram shows a running track made from a rectangle and two semicircles. (Calculator) An athlete runs 5 complete laps around the track. Work out the total distance run, to the nearest 10 metres. The diagram is not drawn accurately. 	
10 Solve $4^{x+3} = 2^6$	