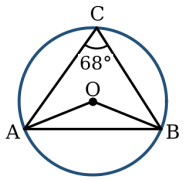
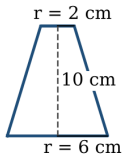
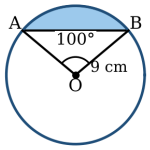
Day 37	S Tier 10-a-day
1 A, B and C are points on a circle, centre O. Angle ACB = 68°. (a) Work out the size of angle AOB. (b) Work out the size of angle OAB. The diagram is not drawn accurately. 	
2 Work out the value of $m^2 - 3nk$ when $m = -2$, $n = 2$ and $k = 3$.	
3 Here are five numbers: 3, $x - 1$, $x + 1$, $x + 4$, $3x + 4$. The mean of the five numbers is 13. (a) Work out the value of x. (b) Work out the median of the five numbers.	
4 The length of a rectangle is decreased by 30%. The width of the rectangle is decreased by 40%. Work out the percentage change in the area of the rectangle.	
5 Solve $3x^2 - 9x - 3 = 0$ Give your answers in surd form.	

Day 37	S Tier 10-a-day
6 A train travels at a constant speed of 72 km/h. It takes 25 seconds to go completely through a tunnel which is 140 m long. Work out the length of the train, in metres.	
7 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 10 cm, top radius 2 cm and base radius 6 cm. Work out the volume of the frustum. Give your answer in terms of π. 	
8 The HCF of two numbers is 3 and their LCM is 45. One of the numbers is 9. Work out the other number.	
9 The circle has centre O and radius 9 cm. A and B are points on the circle and angle AOB = 100°. (Calculator) Work out the area of the shaded segment. Give your answer correct to 3 significant figures. The diagram is not drawn accurately. 	
10 Prove that the sum of the squares of any two odd numbers is 2 more than a multiple of 8.	