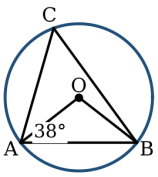
Day 128	S Tier 10-a-day
1 A, B and C are points on a circle, centre O. Angle OAB = 38°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
2 Write $\sqrt{20} + \sqrt{180} - \sqrt{125}$ in the form $a\sqrt{5}$ where a is an integer.	
3 Simplify fully $\frac{5x^2 - 180}{x^2 - 14x + 48}$	
4 Triangle ABC has AB = 4 cm and BC = 12 cm. The area of triangle ABC is $12\sqrt{2}$ cm^2. Angle ABC is acute. Work out the size of angle ABC. Do not use a calculator.	
5 A car travels the first half of a journey at 50 km/h. It travels the second half of the same journey at 75 km/h. Work out the average speed for the whole journey.	

Day 128	S Tier 10-a-day
6 A factory makes 7.2×10^3 bottles each day. It runs for 4×10^2 days. How many bottles does it make? Give your answer in standard form.	
7 Make u the subject of $v = \frac{5}{u^2}$ where u is positive.	
8 A boat leaves a harbour P and travels 67 km on a bearing of 180° to Q. (Calculator) It then travels 85 km on a bearing of 090° to R. (a) Work out the distance PR. (b) Work out the bearing of R from P. Give distances to 1 decimal place and the bearing to the nearest degree.	
9 P is directly proportional to the square of v and inversely proportional to the square of t. When v = 4 and t = 2, P = 48. Work out the value of P when v = 5 and t = 2.	
10 The line $y = 3x + k$ is a tangent to the curve $y = 3x^2 - 3x + 3$. Find the value of k.	