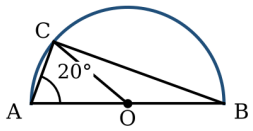
Day 133	S Tier 10-a-day
1 Each interior angle of a regular polygon is 171°. Work out the number of sides of the polygon.	
2 Factorise $12x^2 - 17x - 5$	
3 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 20°. (a) Work out the size of angle ACB. (b) Work out the size of angle COB. The diagram is not drawn accurately. 	
4 A train travels at a constant speed of 54 km/h. It takes 60 seconds to cross completely over a bridge which is 720 m long. Work out the length of the train, in metres.	
5 In a group of employees, 70% are men and the rest are women. 30% of the men and 15% of the women work from home. What percentage of all the employees work from home?	

Day 133	S Tier 10-a-day
6 E is directly proportional to the square root of v. When v = 1, E = 5. (a) Find a formula for E in terms of v. (b) Work out the positive value of v when E = 30.	
7 A metal pipe is a hollow cylinder of length 40 cm. (Calculator) The outer radius is 6 cm and the inner radius is 4 cm. The density of the metal is 8.5 g/cm^3. Work out the mass of the pipe. Give your answer in kilograms correct to 3 significant figures.	
8 Show that $2^{t+2} - 2^t$ is a multiple of 3 for all integer values of t.	
9 $f(x) = \frac{-2x+4}{3x+2}$ where $x \neq -\frac{2}{3}$ (a) Show that ff(x) = x. (b) Write down $f^{-1}(x)$.	
10 A bag contains counters. $\frac{1}{8}$ of the counters are red and $\frac{3}{8}$ of the counters are blue. The rest of the counters, 32 of them, are green. How many blue counters are there?	