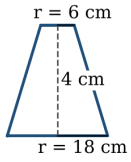
Day 56	S Tier 10-a-day
1 Work out the value of $a^2 - 3bc$ when $a = 5$, $b = -4$ and $c = 1$.	
2 Rationalise the denominator of $\frac{19}{2\sqrt{7}}$ Give your answer in its simplest form.	
3 The ratio of Year 10 students to Year 11 students in a school is 2 : 4. 60% of the Year 10 students and 15% of the Year 11 students have a part-time job. What percentage of all of these students have a part-time job?	
4 (a) Write $x^2 - 10x + 18$ in the form $(x + p)^2 + q$ (b) Write down the coordinates of the turning point of the curve $y = x^2 - 10x + 18$	
5 A solid metal sphere of radius 6 cm is melted down and recast into a solid cylinder of radius 3 cm. Work out the height of the cylinder. The volume of a sphere of radius r is $\frac{4}{3}\pi r^3$.	

Day 56	S Tier 10-a-day
6 Write $6^4 \times 36^3$ as a product of powers of prime numbers.	
7 A and B are two events. P(A) = 0.8, P(B) = 0.7 and P(A or B) = 0.94 (a) Work out P(A and B). (b) Are A and B independent? You must show your working.	
8 The nth term of a sequence is $3n^2 - 2n + 4$. (a) Work out the 12th term. (b) Is 183 a term of the sequence? You must show your working.	
9 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 4 cm, top radius 6 cm and base radius 18 cm. Work out the volume of the frustum. Give your answer in terms of π.  	
10 Jamal and Beth share some money in the ratio 2 : 1. Jamal gives Beth £4. The ratio of their money is now 8 : 7. How much money do they have altogether?	