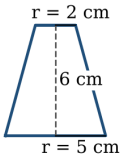
Day 148	IGCSE 10-a-day
1 A is the point $(-2, 0)$ and B is the point $(-5, -6)$. (a) Write down the vector $\mathbf{AB}$. (b) Find $\lvert\mathbf{AB}\rvert$, giving the answer as a surd in simplest form if it is not exact.	
2 Solve $\frac{x-5}{6} + \frac{x+3}{2} = 4$	
3 $y = (x + 2)(x - 5)$ Find $\frac{dy}{dx}$.	
4 Here are the first five terms of a quadratic sequence. 20, 39, 66, 101, 144 Find an expression for the nth term.	
5 Show that $\sqrt{43 + 24\sqrt{3}} = 4 + 3\sqrt{3}$	

Day 148	IGCSE 10-a-day
6 $y = -x^4 + 4x$ Find the coordinates of the stationary point and determine its nature.	
7 The 2nd term of a geometric sequence is 3. The 5th term of the sequence is 81. (a) Work out the common ratio. (b) Work out the first term.	
8 $y = 5x + \frac{80}{x}$ Find the values of x for which y is increasing.	
9 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 6 cm, top radius 2 cm and base radius 5 cm. Work out the volume of the frustum. Give your answer in terms of π.  	
10 y is directly proportional to x and inversely proportional to z. When x = 5 and z = 4, y = 15. Work out the value of y when x = 1 and z = 1.	