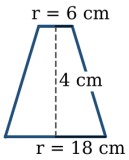
Day 193	IGCSE 10-a-day
1 Work out the gradient of the curve $y = -3x^2 + 7x - 6$ at the point where $x = -3$.	
2 A flight leaves London at 22:05 (London time). It takes 11 hours 30 minutes. When it is 12:00 in London it is 14:00 in Cairo. At what time, in Cairo time, does the flight land? Say if it is on a different day.	
3 The point P(12, 7) lies on the graph of $y = f(x)$. Write down the coordinates of the image of P on the graph of (a) $y = f(x) + 2$ (b) $y = f(2x)$	
4 Work out $(4\frac{2}{3} - 1\frac{1}{2}) \times \frac{3}{8}$ Give your answer as a mixed number or a fraction in its simplest form.	
5 The point A lies on the curve $y = x^2 - 7x + 7$ where $x = 1$. Find the equation of the normal at A. Give your answer in the form $ax + by + c = 0$ where a, b and c are integers.	

Day 193	IGCSE 10-a-day
6 $f(x) = \frac{x+6}{3}$ and $g(x) = x^2 - 4$. Solve $f^{-1}(x) = g(x)$.	
7 The equation of a curve is $y = 4x^2 + \frac{11}{x}$. Work out the gradient of the curve at the point where $x = 1$.	
8 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. 	
9 The price of a coat is decreased by 50% and then increased by 30%. Work out the overall percentage change. State whether it is an increase or a decrease.	
10 An alloy is made by mixing 120 cm^3 of lead with 30 cm^3 of nickel. The density of lead is 11.3 g/cm^3. The density of nickel is 8.9 g/cm^3. Work out the density of the alloy.	