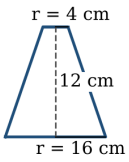
Day 217	IGCSE 10-a-day
1 Make u the subject of $v = \frac{3u + 5}{u - 2}$	
2 $f(x) = -3x^4 + 5x^2 - 3$ (a) Find $f'(x)$. (b) Work out the value of $f'(1)$.	
3 On a coach there are x adults and y children. There are at most 60 people. There are at least 2 children for every adult. There are at least 4 adults. (a) Write down three inequalities for x and y. (b) Find the greatest number of children on the coach.	
4 A curve has equation $y = x^3 - 5x^2 + 2x + 1$. The tangent to the curve at the point A, where x = 3, meets the curve again at the point B. Find the coordinates of B.	
5 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 12 cm, top radius 4 cm and base radius 16 cm. Work out the volume of the frustum. Give your answer in terms of π.  	

Day 217	IGCSE 10-a-day
6 A and B are points on the curve $y = x^3 + 5x$. The x coordinate of A is 2 and the x coordinate of B is 4. Work out the gradient of the line AB.	
7 The curve $y = ax^2 + bx - 9$ has gradient -9 when $x = -2$ and gradient -11 when $x = -3$. Find the values of a and b.	
8 Write $8^5 \times 24^2$ as a product of powers of prime numbers.	
9 $g(x) = x^2 - 10x + 33$ for $x \geq 5$. (a) Find the range of g. (b) Find $g^{-1}(x)$.	
10 The probability that it rains on a day is 0.5. If it rains, the probability that Ali is late for school is 0.6. If it does not rain, the probability that Ali is late is 0.3. (a) Work out the probability that Ali is late. (b) Ali is late. Work out the probability that it rained.	