Day 76	IGCSE 10-a-day
1 A curve has equation $y = 2x^2 + 7x$. The gradient at the point P on the curve is 3. Find the coordinates of P.	
2 The volume of juice is 3 litres, correct to the nearest whole number. Write down the error interval for the volume of juice, using v.	
3 $f(x) = ax + b$, where a and b are constants. $f(5) = 2$ and $f^{-1}(-10) = -1$. Find the value of a and the value of b.	
4 Work out the exact value of $\cos 45° \times \tan 60°$ Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.	
5 Solve $4 \tan x° - 6 = -10$ for $0 \leq x \leq 360$	

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6 A curve has equation $y = 2x^3 + 12x^2 + 26x + 3$. Find the minimum value of the gradient of the curve, and the value of x at which it occurs.	
7 Solve $2 \tan x = 0$ for $0 \leq x \leq 360$.	
8 A curve has equation $y = (x - 3)(x - 1)(x + 4)$. Work out the gradient of the curve at each point where it crosses the x-axis.	
9 P is directly proportional to the square of v and inversely proportional to t. When $v = 5$ and $t = 3$, $P = 25$. Work out the value of P when $v = 2$ and $t = 2$.	
10 Triangle P has vertices A(−2, −5), B(0, −3) and C(−2, −1). Triangle Q has vertices A'(1, −4), B'(2, −3) and C'(1, −2). Q is an enlargement of P. Describe fully the single transformation that maps P onto Q.	