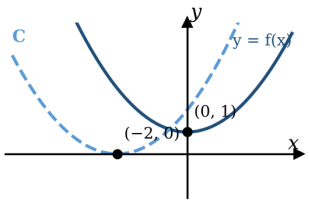
Day 80	IGCSE 10-a-day
1 Write $\sqrt{125} - \sqrt{5} + \sqrt{45}$ in the form $a\sqrt{5}$ where a is an integer.	
2 $y = -3x^4 - 5x - \frac{1}{x}$ Find $\frac{dy}{dx}$.	
3 A sector of a circle has radius 15 cm. The length of the arc of the sector is 5π cm. (a) Work out the angle of the sector. (b) Work out the area of the sector. Give your answer to (b) in terms of π.	
4 $y = 2x^3 + 6x^2 - 18x$ Use the second derivative to show that the curve has a minimum at x = 1.	
5 T is inversely proportional to the square of m. When m = 4, T = 2.25. When m = 6, T = a. When m = b, T = 0.5625. Work out the values of a and b.	

Day 80	IGCSE 10-a-day
6 A curve has equation $y = (x - 2)(x + 2)(x + 3)$. Work out the gradient of the curve at each point where it crosses the x-axis.	
7 $A = 2^3 \times 3^2 \times 11$ $B = 2^2 \times 11^2$ Write down, as a product of prime factors, (a) the HCF of A and B (b) the LCM of A and B	
8 The diagram shows the graph of $y = f(x)$ with a minimum point at (0, 1). The dashed curve C is the image of $y = f(x)$ after a translation. The minimum point of C is $(-2, 0)$. Write down the equation of C in terms of f. 	
9 Make l the subject of $T = 5l^2 - 5$ where l is positive.	
10 The value of a car is increased by 40%. The new amount is then decreased by 40%. Work out the overall percentage change.	