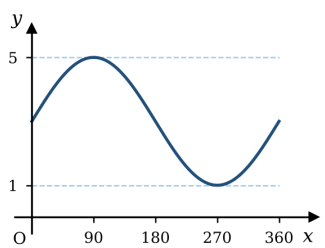
Day 238	IGCSE 10-a-day
1 F is directly proportional to the cube of s. When s = 10, F = 750. (a) Find a formula for F in terms of s. (b) Find F when s = 4.	
2 Solve $x - 10\sqrt{x} + 24 = 0$	
3 A concrete slab in the shape of a cuboid weighs 540 N. Its smallest face has area 800 cm^2. Its largest face has area 2,000 cm^2. Pressure = force ÷ area Work out (a) the greatest pressure and (b) the least pressure the concrete slab can exert on the ground, in N/m^2.	
4 s is inversely proportional to the square of t. When t = 8, s = 7.03125. (a) Find a formula for s in terms of t. (b) Find t when s = 4.5.	
5 The diagram shows the graph of y = a sin x + c. (a) Write down the value of a and the value of c. (b) Work out the value of y when x = 90°. 	

Day 238	IGCSE 10-a-day
6 The curve $y = -x^2 - 5x - 2$ and the line $y = -5x - 6$ intersect at two points A and B, where A has the smaller x coordinate. (a) Find the coordinates of A and B. (b) Find the gradient of the curve at A and at B.	
7 A boat leaves a harbour P and travels 114 km on a bearing of 175° to Q. (Calculator) It then travels 33 km on a bearing of 100° to R. (a) Work out the distance PR. (b) Work out the bearing of R from P. Give distances to 1 decimal place and the bearing to the nearest degree.	
8 The tangent to the curve $y = 2x^2 + 2x - 4$ at the point where $x = 1$ meets the axes at A and B. Work out the area of triangle OAB, where O is the origin.	
9 $N = 2^4 \times 5^4$ How many factors does N have? Include 1 and N.	
10 The curve $y = 2x^3 + 3x^2 + 7$ has two stationary points, A and B. Work out the vertical distance between A and B.	