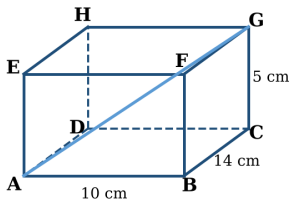
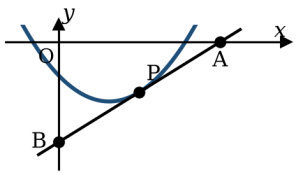
Day 172	IGCSE 10-a-day
1 Sofia invests £3,500 at 5% per year compound interest. After how many whole years will the investment first be worth more than £5,100? (Calculator)	
2 $f(x) = x^2 - 6x - 6$ Use differentiation to find the coordinates of the turning point of the graph of $y = f(x)$. State whether it is a maximum or a minimum.	
3 Simplify $(9x^6y^6)^{\frac{3}{2}}$	
4 ABCDEFGH is a cuboid. AB = 10 cm, BC = 14 cm and CG = 5 cm. (a) Work out the length of AG. (b) Work out the size of the angle between AG and the face ABFE. Give answers to 3 significant figures or 1 decimal place. (Calculator) 	
5 $y = x^3 - 12x - 3$ (a) Find the coordinates of the stationary points. (b) Use $\frac{d^2y}{dx^2}$ to decide whether each is a maximum or a minimum.	

Day 172	IGCSE 10-a-day
6 Solve $2x^2 + 7x = -6$	
7 The diagram shows the curve $y = 2x^2 - 5x - 4$ and the tangent at P(2, −6), meeting the axes at A and B. (a) Find an equation of the tangent at P. (b) Work out the area of triangle OAB. 	
8 A circle has equation $x^2 + y^2 = 625$. The point P(−7, −24) lies on the circle. (a) Find the equation of the tangent to the circle at P. Give your answer in the form ax + by = c, where a, b and c are integers. (b) The tangent meets the x-axis at the point T. Write down the coordinates of T.	
9 p = 10.3 and r = 7.4, each correct to 1 decimal place. q = 2.95, correct to 2 decimal places. Work out the upper bound of $\frac{p+q}{r}$. Give your answer correct to 3 significant figures. (Calculator)	
10 a = 64 and b = 3.29, both correct to 3 significant figures. Work out a ÷ b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	