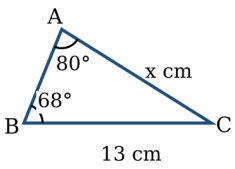
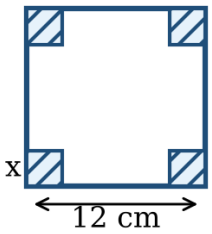
Day 357	IGCSE 10-a-day
1 A flight leaves London at 10:05 (London time). It takes 5 hours 35 minutes. When it is 12:00 in London it is 20:00 in Tokyo. At what time, in Tokyo time, does the flight land? Say if it is on a different day.	
2 $A = \begin{pmatrix} 0 & -5 \\ -6 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} -5 & -4 \\ -5 & -6 \end{pmatrix}$. Find the matrix X such that A + X = B.	
3 A curve has equation $y = x^2 + x - 4$. Find the equation of the tangent to the curve at the point where x = 2.	
4 The equation $x^2 + kx + 9 = 0$ has exactly one solution. Find the possible values of k. Give any surds in their simplest form.	
5 The diagram shows triangle ABC. (Calculator) Work out the length of AC. Give your answer correct to 1 decimal place. The diagram is not drawn accurately. 	

Day 357	IGCSE 10-a-day
6 A bus travels the first half of a journey at 30 km/h. It travels the second half of the same journey at 90 km/h. Work out the average speed for the whole journey.	
7 Squares of side x cm are cut from the corners of a 12 cm square card sheet, which is folded into an open box of volume V cm^3. (a) Show that $V = 4x^3 - 48x^2 + 144x$. (b) Find x for the maximum volume, and this volume.  	
8 Two cones, P and Q, are mathematically similar. The volume of P is 16 cm^3 and the volume of Q is 54 cm^3. The curved surface area of P is 16 cm^2. Work out the curved surface area of Q.	
9 £1,000 is invested for 4 years at r% per year compound interest. At the end of 4 years the investment is worth £1,310.80. Work out the value of r. (Calculator)	
10 $y = x^3 - 6x^2 + 9x$ At the point where $x = -1$, is the curve increasing or decreasing? You must show your working.	