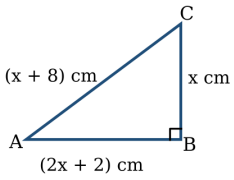
Day 309	S Tier 10-a-day
1 Solve $\frac{x-2}{6} - \frac{x-6}{2} = 2$	
2 The interior angles of a hexagon are $x°$, $(2x - 25)°$, $(2x - 5)°$, $(2x - 30)°$, $(x + 10)°$, $(x + 5)°$ (a) Work out the value of x. (b) Work out the size of the largest angle.	
3 Work out $1\frac{2}{3} \div 2\frac{1}{2} + 1\frac{4}{5}$ Give your answer as a mixed number or a fraction in its simplest form.	
4 A metal crate in the shape of a cuboid weighs 360 N. Its smallest face has area 1000 cm^2. Its largest face has area 1,500 cm^2. Pressure = force ÷ area Work out (a) the greatest pressure and (b) the least pressure the metal crate can exert on the ground, in N/m^2.	
5 $\mathbf{a} = \begin{pmatrix} 0 \\ -2 \end{pmatrix}$, $\mathbf{b} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}$ and $\mathbf{c} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$ $\mathbf{a} + k\mathbf{b}$ is parallel to $\mathbf{c}$. Work out the value of k.	

Day 309	S Tier 10-a-day
6 (a) Write 50 and 22 as products of prime factors. (b) Find the HCF and the LCM of 50 and 22. Give your answers as numbers.	
7 The 2nd term of a geometric sequence is 15. The 5th term of the sequence is 405. (a) Work out the common ratio. (b) Work out the first term.	
8 Write $\frac{5+\sqrt{2}}{2+\sqrt{2}}$ in the form $p + q\sqrt{2}$ where p and q are rational numbers.	
9 ABC is a right-angled triangle with sides (2x + 2) cm, (x) cm and (x + 8) cm. The longest side is (x + 8) cm. (a) Find the value of x. (b) Work out the area of the triangle. The diagram is not drawn accurately. 	
10 The Venn diagram shows how many of 15 students have a tablet (T) or a laptop (L). (a) Work out the value of x. (b) A student is chosen at random from those who have a laptop. Work out the probability that this student also has a tablet. 