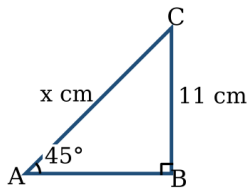
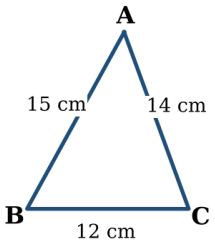
Day 153	IGCSE 10-a-day
1 $y = -6x^{3/2} - 4x - 6\sqrt{x}$ Find $\frac{dy}{dx}$. Give each term of your answer in the form ax^n.	
2 The volume of a cube is 59 cm^3, correct to the nearest cm^3. Work out the lower bound of the edge length of the cube. Give your answer correct to 3 significant figures. (Calculator)	
3 Simplify $(16x^6y^2)^{\frac{1}{2}}$	
4 A tank is filled by a tap in 10 minutes. A drain can empty the full tank in 12 minutes. The tap and the drain are both open, and the tank is empty to begin with. How long does it take for the tank to fill?	
5 The tangent at the point P on the curve $y = 2x^2 + 4x - 8$ is perpendicular to the line $x - 4y = 8$. Find the coordinates of P.	

Day 153 **IGCSE 10-a-day**

6 ABC is a right-angled triangle.
Work out the exact value of x. Give your answer in its simplest form.
The diagram is not drawn accurately.



7 Work out the area of triangle ABC.
Give your answer correct to 3 significant figures. (Calculator)



8 A particle moves in a straight line. After t seconds, its displacement from a fixed point O is s metres, where
$s = -2t^3 + 12t^2 + 5t$ for $t \geq 0$
Find the greatest speed of the particle, and the value of t at which it occurs.

9 Solve $x^{\frac{2}{3}} = 16$
$x > 0$

10 $f(x) = 3x + 9$.
(a) Find $f^{-1}(21)$.
(b) Express $ff(x)$ in the form $px + q$.