

14th August	
Factorise fully $x^3 - 64x$	$= x(x^2 - 64)$ $= \underline{x(x-8)(x+8)}$
<p>The curve $y = x^2 - 12x + 37$ has a minimum point at A.</p> <p>Find the coordinates of the point A</p>	$= (x-6)^2 - 36 + 37$ $= (x-6)^2 + 1$ $\underline{A(6, 1)}$
<p>The line $x + y = 9$ and the curve $y = x^2 - 12x + 37$ intersect at the points B and C.</p> <p>Find the coordinates of B and C.</p>	$x + y = 9 \Rightarrow y = 9 - x$ $9 - x = x^2 - 12x + 37$ $0 = x^2 - 11x + 28$ $0 = (x-4)(x-7)$ $\underline{(4, 5) \text{ and } (7, 2)}$
<p>Show triangle ABC is a right angled triangle.</p>	$(4, 5) \leftrightarrow (7, 2) \quad m = \frac{2-5}{7-4} = -1$ $(6, 1) \leftrightarrow (7, 2) \quad m = \frac{2-1}{7-6} = 1$ $-1 \times 1 = -1 \Rightarrow \text{right angle at } (7, 2)$
<p>Rationalise and simplify</p> $\frac{3\sqrt{2} + 4}{5\sqrt{2} - 7}$	$\frac{3\sqrt{2} + 4}{5\sqrt{2} - 7} \times \frac{5\sqrt{2} + 7}{5\sqrt{2} + 7}$ $= \frac{30 + 41\sqrt{2} + 28}{50 - 49}$ $= \underline{58 + 41\sqrt{2}}$

