
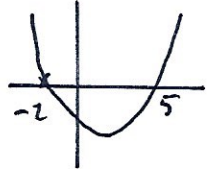
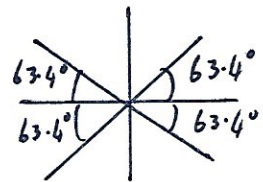


21st February		 Corbettmaths
<p>Expand and simplify fully</p> $(2 + 3\sqrt{7})(10 - \sqrt{7})$ $20 - 2\sqrt{7} + 30\sqrt{7} - 21$ $28\sqrt{7} - 1$		
<p>Solve the inequality</p> $-x^2 + 3x + 10 > 0$ $x^2 - 3x - 10 < 0$ $(x-5)(x+2)$		$-2 < x < 5$
<p>$f(x) = 3x^3 + 11x^2 + 8x - 4$</p> <p>Use factor theorem to show that $(3x - 1)$ is a factor of $f(x)$</p> $f\left(\frac{1}{3}\right) = \frac{1}{9} + \frac{11}{9} + \frac{8}{3} - 4$ $= 0$		$\therefore (3x-1) \text{ is a factor}$
<p>Factorise $f(x)$ fully</p> $(3x-1)(x^2 + 4x + 4)$ $(3x-1)(x+2)(x+2)$ $(3x-1)(x+2)^2$		$3x \times \underline{x^2} = 3x^3$ $-1 \times \underline{4} = -4$ $(3x-1)(x^2 + ax + 4) = 3x^3 + 11x^2 + 8x - 4$ $\underline{x^2} \quad 3ax^2 - x^2 = 11x^2$ $\therefore a = 4$
<p>Solve $\tan^2\theta = 4$</p> <p>for $0^\circ < \theta < 360^\circ$</p> 	$\tan\theta = \pm 2$ $\tan^{-1}(2) = 63.4$	$\theta = 63.4^\circ, 116.6^\circ, 243.4^\circ, 296.6^\circ$