
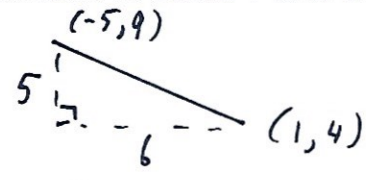
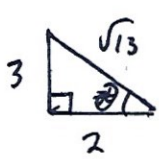
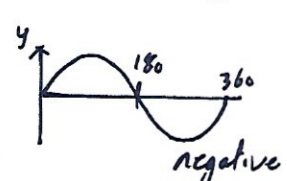


8th January		 Corbettmaths
$y = 6x^4 + x - 4$  Work out $\frac{dy}{dx} = 24x^3 + 1$		
Circle 1 has an equation of $(x - 1)^2 + (y - 4)^2 = 16$ $(1, 4)$  Circle 2 has an equation of $(x + 5)^2 + (y - 9)^2 = 100$ $(-5, 9)$	Calculate the distance between the centres of Circle 1 and Circle 2  $\sqrt{5^2 + 6^2} = \sqrt{61}$	
Solve the simultaneous equations  $y = x - 2$  $2x^2 - xy = 11$  $2x^2 - x(x - 2) = 11$ $2x^2 - x^2 + 2x = 11$ $x^2 + 2x - 11 = 0$ $(x + 1)^2 - 1 - 11 = 0$ $(x + 1)^2 - 12 = 0$	$(x + 1)^2 = 12$ $x + 1 = \pm \sqrt{12}$ $x + 1 = \pm 2\sqrt{3}$ $x = -1 \pm 2\sqrt{3}$ Exact $x = -1 + 2\sqrt{3}$ or $x = -1 - 2\sqrt{3}$ $y = -3 + 2\sqrt{3}$ $y = -3 - 2\sqrt{3}$  Approx $x = 2.464$ or $x = -4.464$ $y = 0.464$ $y = -6.464$	
Given $\tan \theta = \frac{3}{2}$ and $\theta$ is reflex  Work out the value of $\sin \theta$  	$\sin \theta = \frac{\text{Opp}}{\text{Hyp}} = \frac{3}{\sqrt{13}} = \frac{3\sqrt{13}}{13}$   $\sin \theta = -\frac{3\sqrt{13}}{13}$	