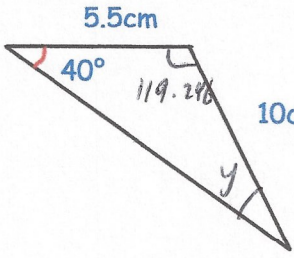


31st August	
<p>C has coordinates (-6, 2) D has coordinates (-2, -6) E has coordinates (1, 3)</p> <p>Find the equation of the line perpendicular to CD and passing through E.</p>	<p>Give your answer in the form $ax + by + c = 0$, where a, b and c are integers.</p> <p>$y = \frac{1}{2}x + c$ $3 = 0.5 + c$ $c = 2.5$</p> <p>$y = \frac{1}{2}x + 2.5$ $2y = x + 5$ $0 = x - 2y + 5$</p>
<p>The speed limit on a road is 50km/h</p> <p>It took Sam 60 seconds, correct to the nearest 5 seconds, to drive along a road that is 780m long, correct to 2 significant figures.</p>	<p>Could Sam have broken the speed limit?</p> <p>Max speed = $\frac{785}{57.5} = 13.6521... \text{ m/s}$</p> <p>49.1478 km/h</p> <p>No</p>
 <p>$\sin y = \frac{\sin 40}{5.5} = \frac{10}{10}$</p> <p>$y = 20.7035...$</p>	<p>Calculate the area of the triangle</p> <p>$\frac{1}{2} \times 5.5 \times 10 \times \sin 119.296$</p> <p>23.98 cm²</p>
<p>Find the coordinates of the points where the line $x + 5y = 37$ and the curve $y = x^2 + x + 2$ meet.</p> <p>$x + 5y = 37$ $x = 37 - 5y$ $y = (37 - 5y)^2 + (37 - 5y) + 2$</p>	<p>$(37 - 5y)(37 - 5y) = 1369 - 370y + 25y^2$</p> <p>$y = 1369 - 370y + 25y^2 + 37 - 5y + 2$</p> <p>$0 = 25y^2 - 376y + 1408$</p> <p>$y = 8$ or $y = 7.04$ $x = -3$ or $x = 1.8$ $(-3, 8)$ $(1.8, 7.04)$</p>
<p>Prove $(4n + 1)^2 - (2n - 1)$ is an even number for all positive integers values of n.</p> <p>$(4n+1)(4n+1) - (2n-1)$ $16n^2 + 8n + 1 - (2n - 1)$</p>	<p>$16n^2 + 6n + 2$</p> <p>$2(8n^2 + 3n + 1)$</p> <p>\therefore <u>even</u></p>