
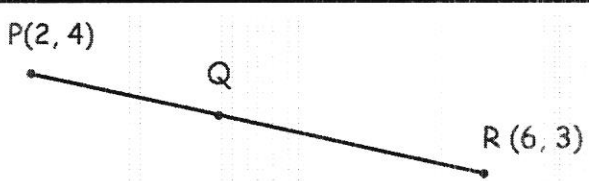


25th June	
Make $h$ the subject of $\sqrt{\frac{2r+h}{9rh}} = V$	 Corbettmaths $V^2 = \frac{2r+h}{9rh}$ $9rhV^2 = 2r+h$ $9rhV^2 - h = 2r$ $h(9rV^2 - 1) = 2r$ $h = \frac{2r}{9rV^2 - 1}$
 <p>P(2, 4)                      Q                      R(6, 3)</p> <p>PQR is a straight line.            QR is 50% longer than PQ  <math>PQ:QR = 2:3</math></p>	Work out the coordinates of Q. $\vec{PR} = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$ $\vec{PQ} = \frac{2}{5} \vec{PR} = \begin{pmatrix} 1.6 \\ -0.4 \end{pmatrix}$ $\vec{OQ} = \begin{pmatrix} 2 \\ 4 \end{pmatrix} + \begin{pmatrix} 1.6 \\ -0.4 \end{pmatrix} = \begin{pmatrix} 3.6 \\ 3.6 \end{pmatrix} \quad Q(3.6, 3.6)$
Prove $\sin^2 x - \cos^2 x \equiv 1 - 2\cos^2 x$	$\text{LHS} = 1 - \cos^2 x - \cos^2 x$ $= \underline{1 - 2\cos^2 x}$
A circle has equation $x^2 + y^2 - 6x + 10y - 2 = 0$ Write the equation of the circle in the form $(x - a)^2 + (y - b)^2 = r^2$	$x^2 - 6x + y^2 + 10y = 2$ $(x - 3)^2 - 9 + (y + 5)^2 - 25 = 2$ $(x - 3)^2 + (y + 5)^2 = 36$ $\underline{a = 3 \quad b = -5 \quad r = 6}$
Write down the coordinates of the point on C that is the furthest from the y-axis.	$(3 + 6, -5)$ $\underline{(9, -5)}$