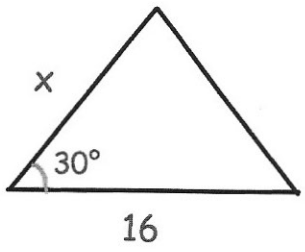
4th July **Higher Plus 5-a-day**

Corbettmaths



$\frac{1}{2}ab\sin C$

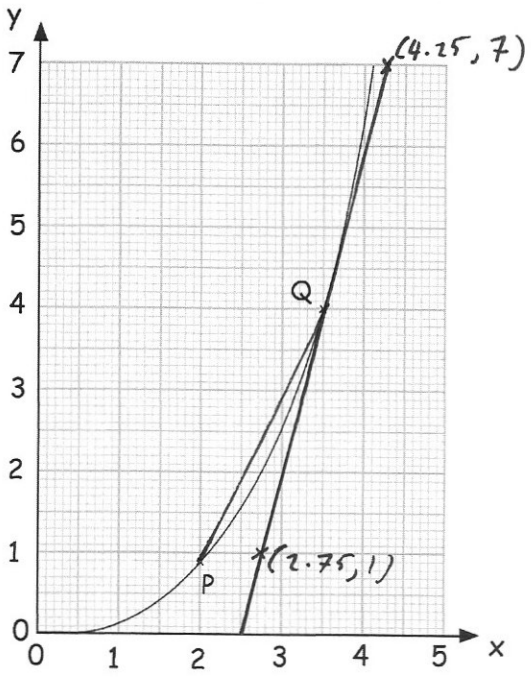
$\frac{1}{2} \times x \times 16 \times \sin 30$

$\frac{1}{2} \times x \times 16 \times \frac{1}{2}$

$4x$

Find the area of the triangle in terms of x.

$4x$



Work out the average rate of change of y with respect to x between points P and Q.

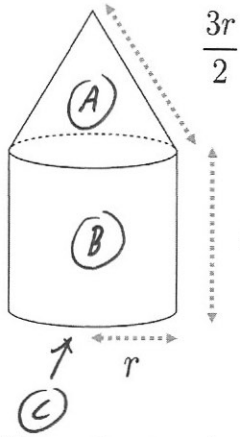
$\frac{\text{rise}}{\text{run}} = \frac{4-0.9}{3.5-2} = 2.0\dot{6}$

Work out the instantaneous rate of change of y with respect to x at point Q.

$\frac{\text{rise}}{\text{run}} = \frac{7-1}{4.25-2.75} = 4$

* gradients may vary due to tangents.

A cone and cylinder are joined to make a solid



(A) $\pi r\left(\frac{3r}{2}\right)$

$= \frac{3}{2}\pi r^2$

(B) $2\pi r(r+6)$

$= 2\pi r^2 + 12\pi r$

(C) πr^2

Show the total surface area of the solid is $\frac{3\pi r}{2}(3r+8)$

$\frac{3}{2}\pi r^2 + 2\pi r^2 + 12\pi r + \pi r^2$

$= \frac{9}{2}\pi r^2 + 12\pi r$

$= \frac{3\pi r}{2}(3r+8)$