

7th July

Higher Plus 5-a-day

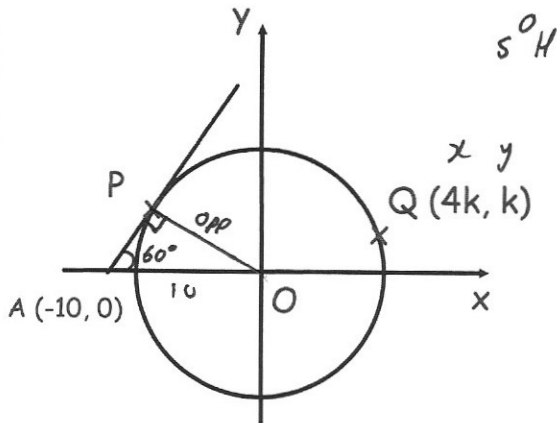


Corbettmaths

A car travelled for 135 minutes, to the nearest 5 minutes.  $132.5 \text{ min}$   
 It travelled for a total distance of 120 km, to the nearest 10km  $125000 \text{ m}$   
 $125 \text{ km}$

Work out the greatest possible average speed, in m/s

$$\begin{aligned} \text{Max } S &= \frac{\text{Max } d}{\text{Min } t} \\ &= \frac{125000(\text{m})}{7950(\text{s})} \\ &= 15.72 \text{ m/s to 2 dp} \end{aligned}$$



AP is a tangent to the circle.  
 Angle OAP =  $60^\circ$

Find the value of k to 1 decimal place.

$$\sin(60) \times 10 = 8.660... \quad (5\sqrt{3})$$

$$x^2 + y^2 = (5\sqrt{3})^2$$

$$x^2 + y^2 = 75$$

$$(4k)^2 + k^2 = 75$$

$$16k^2 + k^2 = 75$$

$$17k^2 = 75$$

$$k^2 = \frac{75}{17}$$

$$k = \pm \sqrt{\frac{75}{17}}$$

$$\boxed{k = 2.1} \text{ or } k = -2.1$$

Make q the subject of

$$\frac{p}{qr} = 2 + \frac{1}{r} \quad \frac{p}{qr} = \frac{2r+1}{r}$$

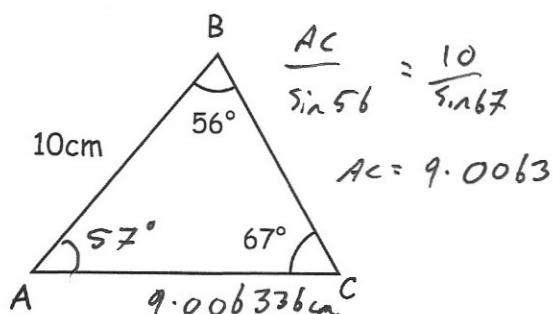
$$\frac{p}{qr} = \frac{2r+1}{r}$$

$$pr = (2r+1)qr$$

$$pr = (2r^2+r)q$$

$$q = \frac{pr}{2r^2+r}$$

$$q = \frac{p}{2r+1} \quad q = \frac{p}{2r+1}$$



Find the area of ABC.

$$\frac{1}{2} \times 10 \times 9.006... \times \sin 57$$

$$= 37.8 \text{ cm}^2 \text{ to 1 dp.}$$