

6th October



Corbettmaths

Simplify

$$\frac{\sqrt{48} + \sqrt{75}}{\sqrt{3}}$$

$$\frac{\sqrt{16} \times \sqrt{3} + \sqrt{25} \times \sqrt{3}}{\sqrt{3}}$$

$$\frac{4\sqrt{3} + 5\sqrt{3}}{\sqrt{3}}$$

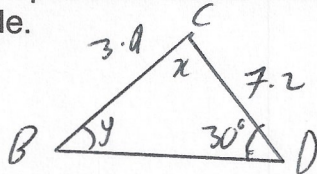
$$\frac{9\sqrt{3}}{\sqrt{3}} = 9$$

$$125^{-\frac{2}{3}}$$

$$\frac{1}{25}$$

Triangle BCD are such that BC = 3.9cm, CD = 7.2cm and  $\angle BDC = 30^\circ$

Work out the possible values of the largest angle.



$$\frac{\sin y}{7.2} = \frac{\sin 30}{3.9}$$

$$\sin y = 0.923\dots$$

$$y = 67.38$$

$$\boxed{x = 82.62}$$

$\angle BCD$

$\angle CBD$

$$\text{or } \boxed{y = 112.62}$$

$$\text{or } x = 37.38$$

The first five terms of a linear sequence are 5, 11, 17, 23, 29 ...

(a) Find the nth term of the sequence

$$\begin{array}{cccccc} 5 & 11 & 17 & 23 & 29 & \\ & 6 & 6 & 6 & 6 & \end{array}$$

$$6n - 1$$

A new sequence is generated by squaring each term of the linear sequence and then adding 5.

(b) Prove that all terms in the new sequence are divisible by 6.

$$(6n - 1)^2 + 5$$

$$36n^2 - 12n + 1 + 5$$

$$36n^2 - 12n + 6$$

$$6(6n^2 - 2n + 1)$$