

14th April



Corbettmaths

Find the equation of the line that is perpendicular to  $y = 3x - 7$  and passes through the point (9, 2)

$$y = -\frac{1}{3}x + c$$

$$2 = -3 + c$$

$$c = 5$$

$$y = -\frac{1}{3}x + 5$$

The first 5 terms of a quadratic sequence are

140 134 126 116 104

Find an expression for the nth term

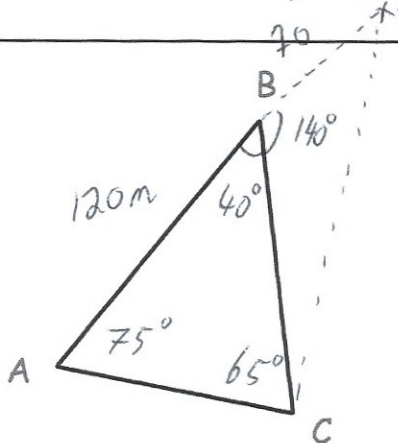
$$-n^2 - 3n + 144$$

140 134 126 116 104  
 -6 -8 -10 -12  
 -2 -2 -2

$$a = -1 \quad 3a + b = -6$$

$$b = -3$$

$$a + b + c = 140 \quad c = 144$$

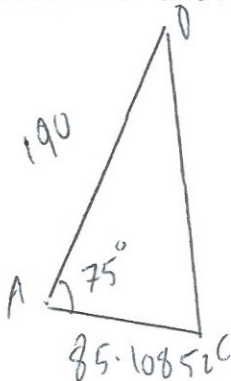


Find the distance AC

$$\frac{120}{\sin 65} = \frac{AC}{\sin 40}$$

$$AC = 85.10852 \text{ m}$$

James is at the point A.  
 He then walks 120m to the point B.  
 Angle ABC = 40° and Angle BAC = 75°



James carries on walking in the same direction for a further 70m to point D.

What is the distance DC?

$$DC^2 = AD^2 + AC^2 - 2 \times AD \times AC \times \cos 75$$

$$DC^2 = 34972.93194$$

$$DC = 187.01 \text{ m}$$