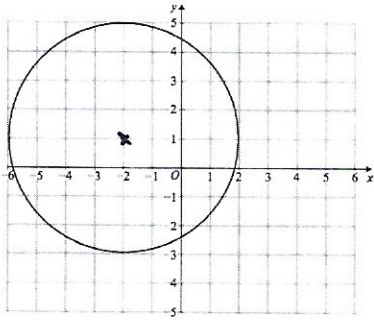


11th January



Corbettmaths



Find the equation of the circle

$$(x+2)^2 + (y-1)^2 = 16$$

Factorise fully

$$(y+3)^4 - (y+3)^3(y-1)$$

Do not attempt to expand brackets.

$$(y+3)^3 [(y+3) - (y-1)]$$

$$(y+3)^3 (4)$$

$$4(y+3)^3$$

The first two term terms in a linear sequence are  $7 + 4\sqrt{6}$  and  $\sqrt{6}$ 

$-7 - 3\sqrt{6}$

 What is the fourth term in the sequence?

$$3^{\text{rd}} \text{ term} : -7 - 2\sqrt{6}$$

$$4^{\text{th}} \text{ term} : -14 - 5\sqrt{6}$$

$$A = \frac{8}{x+1} \quad \text{and} \quad B = \frac{3x+5}{x}$$

$$\text{Given } 5 - A - B = 0$$

Work out the possible values of  $x$ .  
Give your solutions to two decimal places.

$$x = 5.92 \quad \text{or} \quad x = -0.42$$

$$5 - \frac{8}{x+1} - \frac{3x+5}{x} = 0$$

$$\frac{5x(x+1) - 8x - (x+1)(3x+5)}{x(x+1)} = 0$$

$$5x^2 + 5x - 8x - (3x^2 + 8x + 5) = 0$$

$$2x^2 - 11x - 5 = 0$$

$$a=2 \quad b=-11 \quad c=-5$$

$$x = \frac{11 \pm \sqrt{121 + 40}}{4}$$