

8th December



Corbett Maths

An approximate solution to an equation is found by using this iterative process.

$$x_{n+1} = \frac{(x_n)^3 - 2}{5}$$

$$x_2 = \frac{2^3 - 2}{5} = 1.2$$

$$x_3 = -0.0544$$

$$x_4 = -0.40032$$

$$x_5 = -0.4128$$

$$x_6 = -0.41406$$

Given

$$x_1 = 2$$

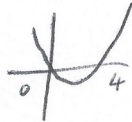
Work out the solution to 3 decimal places

$$x_7 = -0.4141986...$$

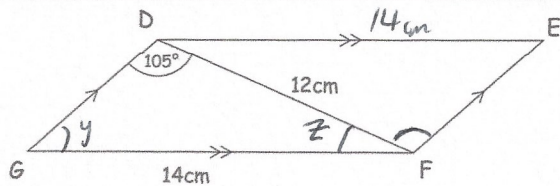
$$x_8 = -0.414... \quad -0.414$$

Solve the inequality  $x^2 - 4x < 0$

$$x(x - 4) < 0$$



$$0 < x < 4$$



$$\frac{\sin y}{12} = \frac{\sin 105}{14}$$

$$y = 55.88...$$

Calculate the area of parallelogram DEFG.

$$z = 19.11...$$

$$\Delta DFG \quad \frac{1}{2} \times 12 \times 14 \times \sin 19.11...$$

$$= 27.5$$

$$55 \text{ cm}^2$$

A bag contains  $9x$  green counters and  $2x$  pink counters.  
 The number of green counters is decreased by 40% and the number of pink counters is increased by 10%.  
 There are now 96 more green counters than pink counters.

Find  $x$

$$\begin{array}{r} 9x \\ \times 0.6 \\ \hline 5.4x \end{array} \quad \begin{array}{r} 2x \\ \times 1.1 \\ \hline 2.2x \end{array}$$

$$5.4x - 2.2x = 96$$

$$3.2x = 96 \quad x = 30$$

Find the coordinates where the line  $y = 12 - 2x$  and the curve  $y = x^2 - 4x + 9$  intersect.

$$x^2 - 4x + 9 = 12 - 2x$$

$$x^2 - 2x - 3 = 0$$

$$(x+1)(x-3) = 0$$

$$x = -1 \text{ or } x = 3$$

$$y = 14 \text{ or } y = 6$$

$$(-1, 14) \quad (3, 6)$$