



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

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

$x_1 = 2$
 $x_2 = 1.2$
 $x_3 = -0.0544$
 $x_4 = -0.40032$
 $x_5 = -0.4128$
 $x_6 = -0.414069$
 $x_7 = -0.414198$

Given

$$x_1 = 2$$

Work out the solution to 3 decimal places

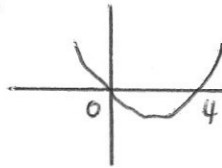
$$x_8 = -0.4142\dots$$

$$\boxed{-0.414}$$

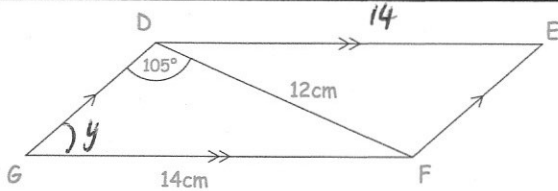
Solve the inequality $x^2 - 4x < 0$

$$x(x-4)$$

$$x=0 \quad x=4$$



$$0 < x < 4$$



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

$$y = 55.38\dots^\circ$$

Calculate the area of parallelogram DEFG.

$$z = 19.11\dots$$

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

$$= 27.5038\dots \text{ cm}^2$$

$$55.0077 \text{ cm}^2$$

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

$$\begin{array}{r} 9x \quad 2x \\ \times 0.6 \downarrow \quad \downarrow \times 1.1 \\ 5.4x \quad 2.2x \\ \hline 5.4x - 2.2x = 96 \\ 3.2x = 96 \\ \boxed{x = 30} \end{array}$$

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

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

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

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

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

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