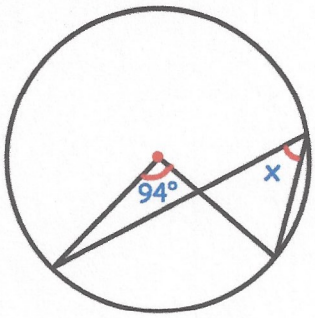
Name: _____ 5-a-day Higher

13th December

Corbettmaths



Find x

47°

Show that an increase of 10% followed by an increase of 10% is equivalent to a 21% increase overall.

$y \times 1.1 \times 1.1$

$= 1.21y$

21% increase

Show $x^2 - 5x + 1 = 0$ has a solution between 4 and 5.

let $f(x) = x^2 - 5x + 1$ ← continuous

$f(4) = -3$

$f(5) = 1$

Since there is a change of sign, there is a solution

Show $x^2 - 5x + 1 = 0$ can be written in the form

$$x = 5 - \frac{1}{x}$$

$x^2 = 5x - 1$

$x = 5 - \frac{1}{x}$

Starting with $x_0 = 4$, use the iteration formula

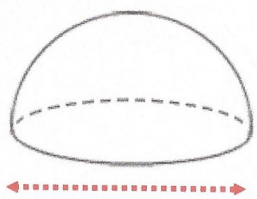
$$x_{n+1} = 5 - \frac{1}{x_n}$$

twice to find an approximate solution of $x^2 - 5x + 1 = 0$

$x_0 = 4$

$x_1 = 5 - \frac{1}{4} = 4.75$

$x_2 = 4.78947...$



$\pi r^2 = 28.274...$

Calculate the surface area of the hemisphere.

$\frac{4\pi r^2}{2} = 56.548\,6676$

$84.823\ cm^2$