



Here are the first and third terms of a Fibonacci-type sequence

$$\begin{array}{ccc} e-d & 2e-d & \\ d & e & \dots \end{array}$$

Work out an expression in terms of  $d$  and  $e$  for the fifth term

4<sup>th</sup> term:

$$e + (e-d) = 2e-d$$

5<sup>th</sup> term:

$$(2e-d) + e = \underline{\underline{3e-d}}$$

A full fish tank has sprung a leak, at the base of the tank. 5% of the water is lost every minute.

How much water is lost from the tank after ten minutes?

$$100 \times 0.95^{10} = 59.87\%$$

$$100 - 59.87\% =$$

$$40.1\%$$

Solve  $x^2 - 9x - 11 = 0$   
giving your answers to 1 decimal place.

$$a = 1 \quad b = -9 \quad c = -11$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{9 \pm \sqrt{81 - (-44)}}{2}$$

$$x = \frac{9 \pm \sqrt{125}}{2}$$

$$x = 10.1 \text{ or } x = -1.1$$

Liquid A has a density of  $0.85 \text{ g/cm}^3$   
Liquid B has a density of  $1.2 \text{ g/cm}^3$

200g of liquid A and 30g of liquid B are mixed for make liquid C.

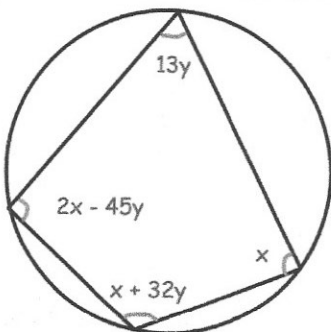
Work out the density of liquid C.

$$d^m v$$

$$A(\text{volume}) = \frac{200}{0.85} = 235.294 \text{ cm}^3$$

$$B(\text{volume}) = \frac{30}{1.2} = 25 \text{ cm}^3$$

$$\text{Density of C} = \frac{230}{260.294} = 0.8836 \text{ g/cm}^3$$



$$3x - 45y = 180$$

$$x + 45y = 180$$

$$\underline{\quad}$$

$$4x = 360$$

$$x = 90^\circ$$

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Find  $x$  and  $y$

$$180 - 45y = 90$$

$$y = 2^\circ$$

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