



Solve the simultaneous equations

$$x + y = 3 \quad y = 3 - x$$

$$x^2 + y^2 = 5$$

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

$$x^2 + 9 - 6x + x^2 = 5$$

$$2x^2 - 6x + 4 = 0$$

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

$$(x-2)(x-1) = 0$$

$$\boxed{\begin{array}{l} x=2 \quad y=1 \\ y=1 \quad \text{or} \quad x=1 \\ x=1 \quad y=2 \end{array}}$$

$$(2,1) \text{ or } (1,2)$$

Ramy saves some of his pocket money each week.

He saves 10p in week 1,  
16p in week 2, 22p in week 3 and so  
on for 40 weeks.

Find the amount he saves in week 40.

$$\begin{array}{ccccccc} 10 & 16 & 22 & 28 & & & \\ & 6 & 6 & 6 & & & 6n+4 \end{array}$$

$$6 \times 40 + 4 = 244$$

$$\pounds 2.44$$

Calculate his total savings over the 40 weeks.

$$10p \text{ e } \pounds 2.44 = \pounds 2.54$$

$$16p \text{ e } \pounds 2.38 = \pounds 2.54$$

$$22p \text{ e } \pounds 2.32 = \pounds 2.54$$

and so on

20 pairings

$$20 \times \pounds 2.54 =$$

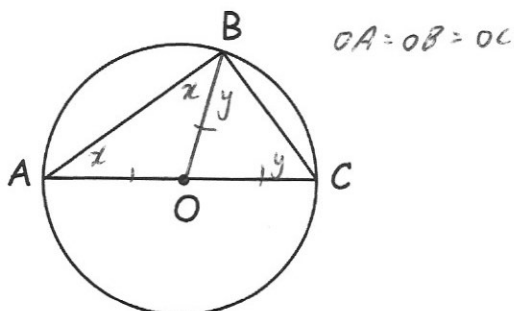
$$\pounds 50.80$$

Rationalise the denominator of

$$\frac{\sqrt{5}}{\sqrt{3}+2} \times \frac{(\sqrt{3}-2)}{(\sqrt{3}-2)}$$

$$\frac{\sqrt{15} - 2\sqrt{5}}{3-4} = \frac{\sqrt{15} - 2\sqrt{5}}{-1}$$

$$2\sqrt{5} - \sqrt{15}$$

Prove that the angle in a semi-circle is always  $90^\circ$ 

$\triangle OAB$  &  $\triangle OBC$  are isosceles

$$\angle OAB = \angle ABO = x$$

$$\angle OBC = \angle OCB = y$$

$\triangle ABC$ : angles add up to  $180$

$$x + (x+y) + y = 180$$

$$2x + 2y = 180$$

$$x + y = 90^\circ \quad \text{QED}$$