M4 =6 days to go!

11 Solve $4 + 3(2x - 5) = x + 9$

$4 + 6x - 15 = x + 9$

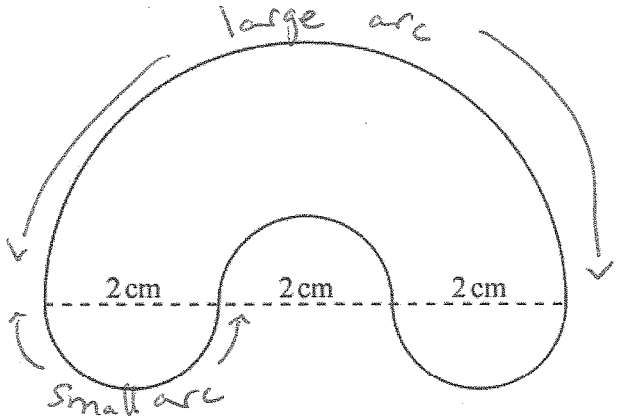
$6x - x = 9 + 15 - 4$

$5x = 20$

$x = 4$

Answer $x =$ 4 [3]

23 A shape with four semicircular edges is shown.



Calculate the perimeter of the shape.

Small arc?

$C = \pi d$

$C = \pi \times 2$

$C = 6.288$

But ÷ by 2

Arc = 3.14

3 small arcs

$3.14 + 3.14 + 3.14$

Big Arc?

$C = \pi \times d$

$C = \pi \times 6$

$C = 18.85$

Arc = 9.42

Perimeter

= 18.84

Quadratic

12 Solve $5t^2 - 8t - 11 = 0$

No marks will be awarded for using trial and improvement.

Give your answers correct to two decimal places.

clue to use quadratic formula.

$ax^2 + bx + c = 0$

$5t^2 - 8t - 11 = 0$

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

$t = \dfrac{8 \pm \sqrt{64 - 4(-11)(5)}}{10}$

$t = \dfrac{8 \pm \sqrt{284}}{10}$

$x =$

$t = \dfrac{8 + \sqrt{284}}{10}$ and $\dfrac{8 - \sqrt{284}}{10}$

Answer 2.49 and -0.89 [3]

14 $x^2 - 10x + 33 \equiv (x - a)^2 + b$

(a) Work out the value of a and the value of b

$(x-a)^2 + b$

$(x-a)(x-a) + b$

$x^2 - 2ax + a^2 + b$

$a^2 + b = 33$

$5^2 + b = 33$

$25 + b = 33$

$2a = 10$

$a = 5$

Answer $a =$ 5 , $b =$ 8 [3]

(b) What is the minimum value of $x^2 - 10x + 33$?

$(x - 5)^2 + 8$

Answer 8 [1]