

Q5

$$2 + 3.5 + \dots$$

$$l = 32.$$

$$d = 1.5$$

$$S_n = \frac{n}{2} (a + l).$$

(i)

$$T_n = 32$$

$$T_n = a + (n-1)d.$$

$$32 = 2 + (n-1)1.5$$

$$32 = 2 + 1.5n - 1.5$$

$$32 = 0.5 + 1.5n$$

$$31.5 = 1.5n$$

$$\underline{n = 21}$$

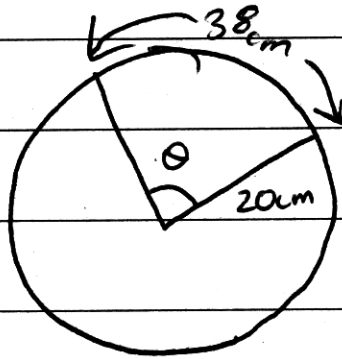
\therefore Catrine threw stick 21 times.

$$\text{(iii)} \quad S_n = \frac{n}{2} [2a + (n-1)d]$$

$$S_{21} = \frac{21}{2} [2(2) + (20)1.5]$$

$$= 357 \text{ m.}$$

The dog ran total distance
of 357 metres.



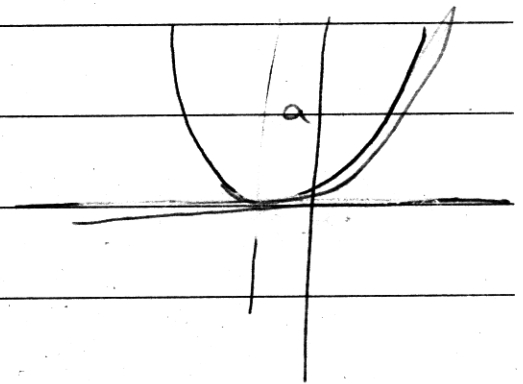
$$l = \theta r$$

$$38 = \theta 20$$

$$\theta = \frac{38}{20}$$

2°

c) $y = x^2 - 8x + 4$



(i) $(x-h)^2 = 4a(y-k)$

where $y=0$.

$$(x-h)^2 = 4a(y-k)$$

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

$$0 = x^2 - 8x + 4$$

$$= \frac{8 \pm \sqrt{8^2 - 4(4)}}{2}$$

$$(x+8)^2 = 4a(0-k)$$

$$= \frac{8 \pm \sqrt{48}}{2}$$

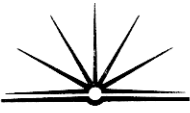
$$= 4 \pm \sqrt{48}$$

$$= 4 \pm \sqrt{12 \times 4}$$

$$= 8\sqrt{3}$$

$$= 8\sqrt{4 \times 3}$$

$$= 16\sqrt{3}$$



(ii) Focus a