

11 - 9 - 2024

Math

Unit 1

Ex 1.8

Q1 Expression of area = $x^2 - 2x - 3$
 $= x^2 - 3x + x - 3$
 $= x(x-3) + 1(x-3)$
 $= (x-3)(x+1)$

$A = l \times w$

$x^2 - 2x - 3 = (x-3)(x+1)$

Expression of length = $(x+1)$ m

Expression of width = $(x-3)$ m

b) $p = 2(L + w)$

$p = 2(x+1) + (x-3)$

$p = 2(x+1+x-3)$

$p = 2(2x-2)$

$p = (4x-4)$ m

expression for perimeter: $(4x-4)$

c) expression for cost of ~~expression~~ fencing @ 200/m = $200 \times (4x-4)$
 $= \text{Rs}(800x - 800)$

d) expression for the cost of carpeting @ Rs 250/m² = $250(x^2 - 2x - 3)$
 $= (250x^2 - 500x - 750)$

Q2 a) Area of Square = $(25x^2 - 30x + 9)m^2$

$$A = L \times L = \sqrt{A} = \sqrt{25x^2 - 30x + 9}$$

$$L = \sqrt{A_{\text{area}}}$$

$$= \sqrt{(5x)^2 - 2(5x)(3) + (3)^2}$$

$$= \sqrt{(5x-3)^2}$$

$$L = 5x-3$$

b) $p = 4 \times L$
 $= 4(5x-3)m$
 $= 20x-12m$

c) $75(25x^2 - 30x + 9)m^2$

d) $28(5x-3)(5x-3)$

$28(10x-6)$ or

$280x-168$ Ans.

Q3 Cubic Volume/Cube = $L \times L \times L$

$$V = L^3$$

$$\sqrt[3]{V} = \sqrt[3]{L^3}$$

$$\sqrt[3]{V} = L \quad \leftarrow \text{formula of volume}$$

$$(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$

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

$$\sqrt[3]{V} = (5x-2)^3$$

a) $\sqrt[3]{V} = L$
 $L = \sqrt[3]{(5x-2)^3}$

$L = (5x-2)m$

b) $6(5x-2)m^2$
 $6(5x-2)^2m^2$

c) $32 \times 6(5x-2)$

$Rs 192(5x-2)m$ Ans.

Q4 Area of $w_1 = \pi r^2 = 6\pi x + 9\pi$ formula of Area Circle = $A = \pi r^2$

$$A = \pi r^2$$

$$\frac{A}{\pi} = r^2$$

$$r^2 = \frac{\pi(x^2 - 6x + 9)}{\pi}$$

$$r^2 = (x^2 - 6x + 9)$$

$$\sqrt{r^2} = \sqrt{(x^2 - 6x + 9)^2}$$

$$\sqrt{r^2} = (x^2 - 6x + 9)$$

$$\sqrt{r^2} = \sqrt{(x^2 - 6x + 9)}$$

$$r = \sqrt{x^2 - 6x + 9}$$

$$w_1 = x - 3$$

$$\text{Area of } w_2 = \pi x^2 - 10\pi x + 25\pi$$

$$r^2 = \frac{A}{\pi} = \frac{\pi(x^2 - 10x + 25)}{\pi}$$

$$r^2 = (x^2 - 10x + 25)$$

taking square

$$\sqrt{r^2} = \sqrt{(x^2 - 10x + 25)}$$

$$r = \sqrt{(x^2 - 10x + 25)}$$

$$r = \sqrt{(x^2 - 5x - 5x + 25)}$$

$$r = \sqrt{(x-5) - 5(x-5)}$$

$$r = \sqrt{(x-5)(x-5)}$$

$$r = \sqrt{(x-5)^2}$$

$$r = (x-5)$$

$$\begin{array}{r} x-3 \\ x \overline{) x^2 - 6x + 9} \\ \underline{x^2} \\ -6x + 9 \\ \underline{-6x + 9} \\ 0 \end{array}$$

Q5

$$\text{Area of 1 presser } A_1 = 25m^2$$

$$A_2 = 36n^2$$

$$\text{Area of rectangular presser } = A = 25m^2 \cdot 36n^2$$

$$A = 25m^2 \cdot 36n^2$$

$$A = (5m)^2 \cdot (6n)^2$$

$$A = (5m+6n)(5m-6n)$$

$$\text{Hence length of rectangular presser} = (5m+6n)$$

$$\text{Hence width of rectangular presser} = (5m-6n)$$

Q6 Distance = $(x^2 + 5x + 6)m$

$$d = s \times t$$

$$d = x^2 + 5x + 6$$

~~$$d = x^2 + 6x + 6$$~~

$$d = x^2 + 3x + 2x + 6$$

$$d = x(x+3) + 2(x+3)$$

$$d = (x+3)(x+2)$$

if speed is $(x+3)$ so time is $(x+2)$ Ans.

$$6 \times 1 = 6$$

$$3 \times 2 = 6$$

$$3 + 2 = 5$$