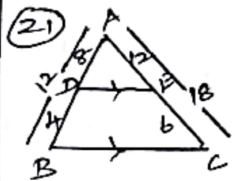


FIRST REVISION TEST- 2025. STANDARD-X.- MATHEMATICS.

I Part-A.

1. (B) 2.
2. (A) (8,6)
3. (E) 1
4. (C) 14280
5. (B)  $16x^2$
6. (B) 4.
7. (C) 13m
8. (D)  $5\sqrt{2}$  cm
9. (B) Parallel to y-axis
10. (C)  $m_1, m_2 = -1$
11. (D)  $60^\circ$
12. (A) 12 cm
13. (A) 3:1:2
14. (A) 3.5



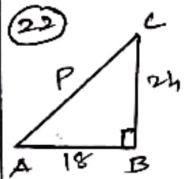
(21)

$$\frac{AD}{DB} = \frac{AE}{EC}$$

$$\frac{8}{4} = \frac{12}{6}$$

$$2 = 2$$

$\therefore DE \parallel BC$



(22)

$$AC^2 = AB^2 + BC^2$$

$$= 18^2 + 24^2$$

$$= 900$$

$AC = 30$  m

(23)

$$y - 51 = m(x - 11)$$

$$y - 2 = \frac{-5}{4}(x + 1)$$

$$4(y - 2) = -5(x + 1)$$

$$4y - 8 = -5x - 5$$

$$5x + 4y - 8 + 5 = 0$$

$$5x + 4y - 3 = 0$$

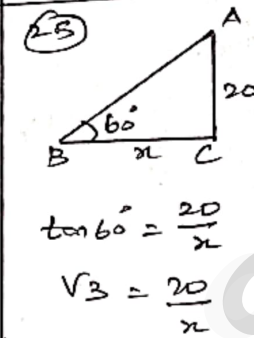
(24)

$$m_1 = \frac{-2}{3}$$

$$m_2 = \frac{-2}{3}$$

$m_1 = m_2$

$\therefore$  Two lines are Parallel.



(25)

$$\tan 60^\circ = \frac{20}{x}$$

$$\sqrt{3} = \frac{20}{x}$$

$$x = \frac{20 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} = \frac{20 \times 1.732}{3}$$

$$= 11.55 \text{ m.}$$

II Part-C

- (29)
- i) Relation
  - ii) Not Relation
  - iii) Not Relation

(30)

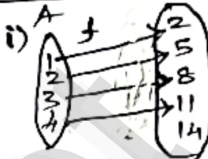
$$f(n) = 3n - 1$$

$$f(1) = 3 - 1 = 2$$

$$f(2) = 6 - 1 = 5$$

$$f(3) = 9 - 1 = 8$$

$$f(4) = 12 - 1 = 11$$



ii)

n	1	2	3	4
f(n)	2	5	8	11

iii)

$f = \{(1,2), (2,5), (3,8), (4,11)\}$



(31)

$$S_1 = \frac{n}{2} [2a + (n-1)d]$$

$$S_2 = \frac{2n}{2} [2a + (2n-1)d]$$

$$S_3 = \frac{3n}{2} [2a + (3n-1)d]$$

$$S_2 - S_1 = \frac{2n}{2} [2a + (2n-1)d] - \frac{n}{2} [2a + (n-1)d]$$

$$= \frac{n}{2} [4a + 2(2n-1)d] - [2a + (n-1)d]$$

$$= \frac{n}{2} [2a + (3n-1)d]$$

$$3(S_2 - S_1) = \frac{3n}{2} [2a + (3n-1)d]$$

$\therefore 3(S_2 - S_1) = S_3$

II Part-B.

(15)  $A = \{3, 5\}$   $B = \{2, 4\}$

(16)  $f(f(k)) = 2(2k-1) - 1$

$$= 4k - 3$$

$f \circ f(k) = 5$

$$4k - 3 = 5$$

$k = 2$

(26)  $V = \pi r^2 h$  cm<sup>3</sup>

base Area =  $250 \text{ m}^2$

$$= 250 \times 2$$

$$= 500 \text{ m}^2$$

(17)  $13824 = 2^9 \times 3^3$

$a = 9$   $b = 3$

(27)

$S = \{1H, 1T, 2H, 2T, 3H, 3T, 4H, 4T, 5H, 5T, 6H, 6T\}$

$n(S) = 12$

$A = \{1H, 3H, 5H\}$

$n(A) = 3$

$P(A) = \frac{3}{12} = \frac{1}{4}$

(32)

$$10^2 + 11^2 + 12^2 + \dots + 24^2$$

$$= (1^2 + 2^2 + \dots + 24^2) - (1^2 + 2^2 + \dots + 9^2)$$

$$= \frac{24(25)(49)}{6} - \frac{9(10)(19)}{6}$$

$$= 4900 - 285$$

$$= 4615 \text{ cm}^2$$

$\sum n^2 = \frac{n(n+1)(2n+1)}{6}$

(18)  $tn = ar^{n-1}$

$ts = ar^7$

$$= 9 \left(\frac{1}{3}\right)^7$$

$$= \frac{1}{243}$$

(28)  $A = \begin{pmatrix} 5 & -4 \\ 6 & -5 \end{pmatrix}$

$$A^2 = \begin{pmatrix} 25 - 24 & -20 + 20 \\ 30 - 30 & -24 + 25 \end{pmatrix}$$

$$A^2 = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} = I$$

$\therefore A^2 = I$

Hence Parallel.

(35) Thales Theorem

Statement

Proof.

Construction

$$\frac{AD}{DB} = \frac{AE}{EC}$$

(19)

$$\frac{20x^2 y z}{10x^4 y^2 z}$$

(20)  $\Delta = b^2 - 4ac$

$$= (1)^2 - 4(15)(2)$$

$$= 1 - 120$$

$$= -119$$

real and unequal.

