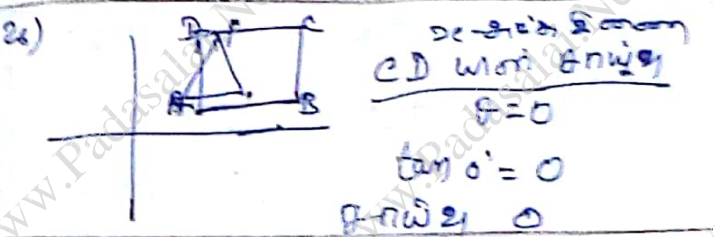


- 1 $\langle P, a \rangle$
- 2 5
- 3 0
- 4 a/b
- 5 x^2
- 6 $(x+1)(x+2)$
- 7 $(x+1)$
- 8 $(x-5)(x-3)$
- 9 $m=n$
- 10 4×4
- 11 $4:5$
- 12 2 சிவகாமன்
- 13 40
- 14 $4:9$
- 15 $\cos B$

23) $A = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \\ a_{31} & a_{33} \end{pmatrix} A = \begin{pmatrix} 1/2 & 9/2 \\ 0 & 2 \\ 1/2 & 1/2 \end{pmatrix}$

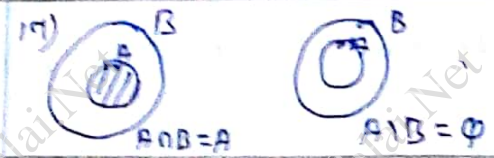
24) $A = \begin{pmatrix} 1 & -2 \\ -16 & 6 \end{pmatrix}$
 $-A = \begin{pmatrix} -1 & 2 \\ 16 & -6 \end{pmatrix}$

25) $\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}$
 $= (4, -2)$



27) $m = \frac{2}{3} (5, -4)$
 $y - y_1 = m(x - x_1)$ $3y + 12 = 2x - 10$
 $y + 4 = \frac{2}{3}(x - 5)$ $2x - 3y - 22 = 0$

16) $B \cup C = \{1, 2, 3, 4, 5, 6\}$
 $A \cap (B \cup C) = \{4, 6\}$



18) $F_1 = 1$ $F_2 = 2$ $F_3 = 5$
 $F_2 = 1$ $F_3 = 3$ $F_4 = 5$

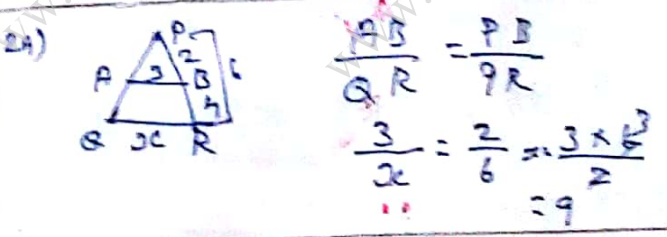
19) $t_n = ar^{n-1}$ $2^{10} = 2^{n-1}$
 $1024 = 2^{n-1}$ $n-1 = 10$
 $n = 11$

20) $11x + 3y = 50$ $3x = 12$
 $8x + 3y = 38$ $x = 4$
 $3x = 12$ $y = 2$

21) $\begin{vmatrix} 1 & 1 & -9 & -3 \\ 0 & 3 & 12 & 15 \\ 1 & 4 & 5 & 12 \end{vmatrix}$
 $x^2 + 4x + 5$ $\text{BB } 12$

22) $\frac{2x^3 - x^2 + 3 - x^3 + 1}{x^2 + 2}$
 $= \frac{x^3 - x^2 + 4}{x + 2}$

28) $\text{cosec}^2(90 - \theta) - \text{cot}^2(90 - \theta)$
 $\text{sec}^2 \theta - \tan^2 \theta = 1$



30) a) $A = \{-2, -1, 1, 2\}$ $\frac{1}{2}, \frac{1}{2} \in A$
 $f = \left\{ x, \frac{1}{x} \right\} x \in A$ $\text{B} \cap \text{A} = \emptyset$
 $\left(2, \frac{1}{2}\right) (-1, -1) (1, 1) (2, \frac{1}{2})$

31) $\frac{\sin \theta (1 - 2 \sin^2 \theta)}{\cos \theta (2 \cos^2 \theta - 1)}$
 $\frac{\sin \theta (2 \cos^2 \theta - 1)}{\cos \theta (2 \cos^2 \theta - 1)} = 1$

31) $S_n = \{15, 30\}$
 $A \cup B = \{10, 25, 30, 35, 40, 45\}$
 $A \cap B = \{25, 30, 35\}$
 $n(A \cup B) = n(A) + n(B) + n(A \cap B)$
 $= 6 + 6 + 3 = 15$

32) $B+C = \begin{pmatrix} -1 & 0 \\ 1 & 10 \end{pmatrix}$ $A(B+C) = \begin{pmatrix} -1 & 38 \\ 5 & 24 \end{pmatrix}$
 $AB = \begin{pmatrix} 6 & 29 \\ 26 & 23 \end{pmatrix}$ $AC = \begin{pmatrix} -7 & 9 \\ -21 & 11 \end{pmatrix}$
 $AB+AC = \begin{pmatrix} -1 & 38 \\ 5 & 24 \end{pmatrix}$
 $= \begin{pmatrix} -1 & -4 \\ 8 & 7 \end{pmatrix}$ $4A = \begin{pmatrix} -4 & 4 \\ -8 & 12 \end{pmatrix}$
 $5I_2 = \begin{pmatrix} 5 & 0 \\ 0 & 5 \end{pmatrix}$
 $A^2 - 4A + 5I_2 = \begin{pmatrix} 4 & 0 \\ 0 & 0 \end{pmatrix}$

33) $f(4) = 3$
 $f(6) = 4$
 $f(8) = 5$
 $f(10) = 6$

34) Area of quadrilateral = $\frac{1}{2}(35 - 1 - 51)$
 $= \frac{1}{2} \times 86 = 43$

34) $a = 308$ $d = 495$ $n = 11$
 $n = \frac{d-a}{a} + 1 = 18$ 7227
 $S_n = \frac{n}{2}[a+d] = \frac{11}{2}[308+495]$

35) $A(10, 0)$ $B(0, 7)$ $O(0, 0)$
 $USNH = 35$ 8×3

35) $4 + 44 + 444 + \dots + n \text{ zeros}$
 $4(1+11+111+\dots+n \text{ zeros})$
 $\frac{4}{9}(9+99+999+\dots+n \text{ zeros})$
 $\frac{4}{9}((10-1)(100-1)\dots+n \text{ zeros})$

36) $S_n = \frac{4}{9} \left(\frac{10(10^n - 1)}{9} - n \right)$

36) $(x+1)$ $(2x-1)$ $(x-2)$
 $2x^2 - 5x + 2 = (2x-1)(x-2)$
 $(x+1)(2x-1)(x-2)$

37) $m^2 - n^2 = H \sin \theta \tan \theta$
 $4\sqrt{mn} = 4 \sin \theta \tan \theta$

37) $x^2 + 2x - 3$

38) $\frac{1}{p-a} - \frac{2a}{p^2-a^2} = \frac{2(p+a) - 2a}{p^2-a^2}$
 $\frac{p+a-2a}{p-a} = \frac{p-a}{(p+a)(p-a)} = \frac{1}{p+a} = 1$
 $p+a=1$ $\frac{1}{p+a}=1$

38) $\frac{8}{x} + \frac{12}{y} = \frac{1}{10}$ $\frac{a}{x} = a$
 $\frac{6}{x} + \frac{8}{y} = \frac{1}{14}$ $\frac{b}{y} = b$
 $8a + 12b = \frac{1}{10}$ $a = \frac{1}{140}$
 $6a + 8b = \frac{1}{14}$ $c = 140$
 $b = \frac{1}{280}$
 $y = 280$

46 a) $8 \cdot 4 \text{ cm}$ (circumference) 8 m

x	100	200	300	400	500	600
y	10	20	30	40	50	60

46 b) $k = \frac{1}{10}$ $y = \frac{1}{10}x$
 $650 - 65$
 $45 - 450$

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