

Shining Star Matric Hr Sec School Kalpakkam

Test-1

1. $A = \{1 < x < 4\}$, $B = \{0 \leq x < 2\}$, $C = \{x \in \mathbb{N}, x \leq 3\}$ V-T
 (i) $A \times (B \cup C) = (A \times B) \cup (A \times C)$ (ii) $A \times (B \cap C) = (A \times B) \cap (A \times C)$
2. $f(x) = x-4$, $g(x) = x^2$, $h(x) = 3x-4$, S.T $(f \circ g) \circ h = f \circ (g \circ h)$
3. If d is the H.C.F of 32 and 60, $d = 32x + 60y$ find x, y .
4. The sum of first $n, 2n, 3n$ terms of A.P are S_1, S_2, S_3 resp.
 P.T $S_3 = 3(S_2 - S_1)$.
5. Solve: $x+y+z=5$, $2x-y+z=9$, $x-2y+3z=16$.
6. Find a, b , if the polynomial is perfect square
 $ax^4 + bx^3 + 361x^2 + 220x + 100$
7. $A = \begin{pmatrix} 1 & 1 \\ -1 & 3 \end{pmatrix}$ $B = \begin{pmatrix} 1 & 2 \\ -4 & 2 \end{pmatrix}$ $C = \begin{pmatrix} -7 & 6 \\ 3 & 2 \end{pmatrix}$ V.T $A(B+C) = AB+AC$.
8. State and prove Pythagoras Theorem
9. Find k , area of quadrilateral is 28 sq. units.
 Points $(-4, -2)$ $(-3, k)$ $(3, -2)$ $(2, 3)$.
10. Find the eqn of the perpendicular bisector of the line joining the points $A(-4, 2)$, $B(6, -4)$
11. Two ships are sailing in the sea on either sides of a lighthouse. The angle of elevation at top $30^\circ, 40^\circ$ at the lighthouse is 200m. Find the distance between the two ships.
12. If the radii of the frustum which is 45cm high are 28cm and 7cm find the volume of the frustum.
13. A metallic sphere of radius 16cm is melted and recast into small spheres each of radius 2cm. How many small spheres can be obtained?

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2	6	7	8	9	10	11	12
f	3	6	9	13	8	5	4

find S.D

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15. Find C.O of 24, 26, 33, 37, 29, 31.

16. Two dice are rolled together. find the probability of getting a doublet or sum of faces as 4.

17. A cylinder container of radius 6cm, height 15cm is full of ice-cream. The ice cream is to be filled in cones of the height 9cm, radius 3cm having a hemispherical cap. find the no. of cones needed to empty the container.

18. The angles of elevation and depression of the top and bottom of a lamp post from the top of a 66m high apartment are 60° , 30° (i) find the height of the lamp post (ii) The difference between height of the lamp post and apartment

19. A(1, -4), B(2, -3) C(4, -7) S.T. points a right angle triangle, check ~~P.T.~~ Pythagoras theorem.

20. $(c^2 - ab)x^2 - 2(a^2 - bc)x + b^2 - ac = 0$ are real and equal P.T either $a=0$ (or) $a^3 + b^3 + c^3 = 3abc$.