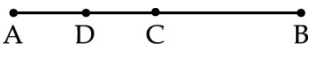
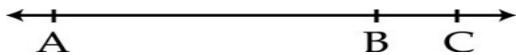


1. If $x = \sqrt{7/5}$ and $5/x = p\sqrt{7}$ then find the value of p
2. If the points $A(2, 0)$, $B(-6, 0)$ and $C(3, a-3)$ lie on the x -axis, then find the value of a
3. In figure C is the mid-point of AB and D is the midpoint of AC . Prove that $AD = \frac{1}{4} AB$.

4. Verify that: $xy [(x+y) (\frac{1}{x} + \frac{1}{y}) - 4] = (x-y)^2$
5. if $4^{2x-1} - 16^{x-1} = 384$ then find the value of x .
6. If x and y are two positive real numbers such that $8x^3 + 27y^3 = 730$ and $2x^2y + 3xy^2 = 15$ then evaluate : $2x + 3y$
7. The polynomial $p(x) = kx^3 + 9x^2 + 4x - 8$ when divided by $(x + 3)$ leaves a remainder $10(1 - k)$. Find the value of k .
8. If $x - a$ is the factor of $3x^2 - mx - na$ then prove that $a = (m + n)/3$
9. Factorise using the remainder theorem $2x^3 - 9x^2 - 11x + 30$.
10. If $x^3 - 5x^2 - px + 24 = (x - 4) \cdot q(x)$, then what is the value of p ?
11. If $x^a = y$, $y^b = z$ and $z^c = x$ then prove that $abc = 1$.
12. If a, b, c are real numbers and $a^2 + b^2 + c^2 + ab - bc - ca = 0$ then show that $a = b = c$.
13. Find the value of k , such that $x - 1$ is a factor of $5x^3 + 4x^2 - 6x + 2k$
14. In the figure, if A, B and C are three points on a line and B lies between A and C , then prove that $AB + BC = AC$



15. Simplify : $(a+2b+3c)^2 - (a-2b-3c)^2 - 6b^2 - 9bc$.
16. What is the perpendicular distance of a point $P(5, 3)$ from y -axis
17. If A, B, C are three points on a line and B lies between A and C , then prove that $AB + BC = AC$
State the Euclid's axiom/postulate used to prove this.
18. If a, b, c are all non-zeroes and $a + b + c = 0$, prove $(\frac{a^2}{bc}) + (\frac{b^2}{ac}) + (\frac{c^2}{ab}) = 3$
19. In $\triangle ABC$ and $\triangle PQR$, two sides AB and AC and median AM of one triangle ABC are respectively equal to the sides PQ and QR and median PN of triangle PQR . Show that : (i) $\triangle ABM \cong \triangle PQN$ (ii) $\triangle ABC \cong \triangle PQR$
20. (a) Find the Mirror image of the point $(-1, 2)$ on y -axis (b) Find the Mirror image of point $(3, 9)$ on x axis
21. Prove that the sum of two sides of a triangle is greater than twice the median with respect to the third side.
22. If $a = 8 + 3\sqrt{7}$, and $b = 1/a$, what will be the value of $a^2 + b^2$
23. $(a+b)^3 + (b+c)^3 + (c+a)^3 - 3(a+b)(b+c)(c+a) = 2(a^3 + b^3 + c^3 - 3abc)$
24. Three vertices of a square $PQRS$ are $P(-4, 0)$, $Q(1, 0)$ $R(1, -5)$. Plot the points. Also find the co-ordinates of the missing vertex S .
25. what is/are the abscissa of all the points on y -axis
26. Find the values of a and b , if $x^2 - 4$ is a factor of $ax^4 + 2x^3 - 3x^2 + bx - 4$ and hence factorise it completely.
27. Find the perimeter of a triangle whose vertices are $(0, 4)$, $(3, 0)$ and $(-3, 0)$