



DELHI PUBLIC SCHOOL, CHANDIGARH

Periodic Test 1, Session 2023-24

Class: IX, Subject: Maths (Set 2)

Time 1:30 hrs

Aashita

MM: 40

General Instructions:

The question paper is divided into 5 sections – A, B, C, D and E.

- Section A comprises of 11 questions of 1 mark each.
- Section B comprises of 3 questions of 2 marks each. Internal choice has been provided in 1 question.
- Section C comprises of 3 questions of 3 marks each. Internal choice has been provided in 1 question.
- Section D comprises of 2 questions of 5 marks each. Internal choice has been provided in 1 question.
- Section E comprises of 1 case study-based question.

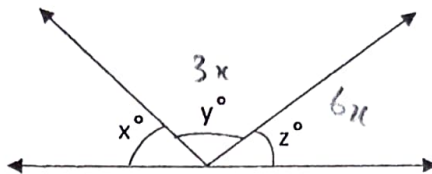
Section – A



- The value of $\sqrt[4]{\sqrt[3]{5^2}}$ is
(a) $5^{-\frac{1}{6}}$ (b) $5^{\frac{1}{6}}$
(c) 5^{-6} (d) 5^6
- The denominator of $\frac{5}{4\sqrt{3} - 4\sqrt{2}}$ after rationalisation is
(a) 16 (b) 22
(c) 25 (d) 30
- The degree of a zero polynomial is
(a) 0 (b) 1
(c) 2 (d) not defined
- Abscissa of all the points on the y-axis is
(a) 0 (b) 1
(c) -1 (d) any natural number
- If $x = 3$ and $y = -1$ is a solution of the equation $px - 3y = 12$, then the value of p is:
(a) 0 (b) $\frac{1}{2}$
(c) 2 (d) 3
- If the perpendicular distance of a point from the y-axis is 5 units and the foot of the perpendicular lies on the negative direction of y-axis, then the point P has:
(a) x coordinate = 5 or -5 only (b) x coordinate = 5 only
(c) x coordinate = -5 only (d) y coordinate = -5
- If the coordinates of the two points are $P(-7, 5)$ and $Q(-6, 9)$, then (ordinate of P) – (ordinate of Q) is
(a) -3 (b) 1
(c) -2 (d) -4

8. The graph of the equation $3x - 2y = 6$ cuts the x-axis at the point
- (a) (0, 3) (b) (3, 0)
 (c) (2, 0) (d) (0, 2)
9. If $\frac{y}{x} = 3$ and $\frac{z}{x} = 6$, then the value of x is

- (a) 8° (b) 18°
 (c) 12° (d) 15°



$6 - 0 = 6$
 $3(0) - 2(3) = 6$
 $0 - 6 = 6$
 $-6 \neq 6$
 $3(3) - 2(0) = 6$
 $9 - 0 = 6$

DIRECTIONS: In each of the following questions, a statement of Assertion is given followed by a corresponding statement of Reason just below it. Of the statements, mark the correct answer as

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
 (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
 (c) Assertion is true but reason is false.
 (d) Assertion is false but reason is true.

10(a) **Assertion:** $y^3 - 5$ is a cubic polynomial.

Reason: Degree of polynomial 3 is called cubic polynomial.

$3 \times 12 = 36$
 $36 - 3 = 33$
 $33 - 30 = 3$
 309

11. **Assertion:** 246° is a type of reflex angle.

Reason: A reflex angle is smaller than straight angle.

Section - B

Let $x = 3.12$
 Let $100x = 312.12$

12. Express $3.\overline{12}$ in $\frac{p}{q}$ form, where p and q are integers and q is non zero. $\frac{103}{33}$

OR

$4x = 5$ $3^{4x} = 3^5$
 $x = \frac{5}{4}$

If $3^{5x} \div 3^x = \sqrt[5]{243}$, then find the value of x $3^{5x} \div 3^x = (243)^{\frac{1}{5}}$

13. The cost of a table is Rs 100 more than half the cost of a chair. Write this statement as a linear equation in two variables. Also, find two solutions of the equation so formed. $y = 100 + \frac{x}{2}$

14. Prove that if two lines are intersecting each other at a point then vertically opposite angles are equal.

Section - C

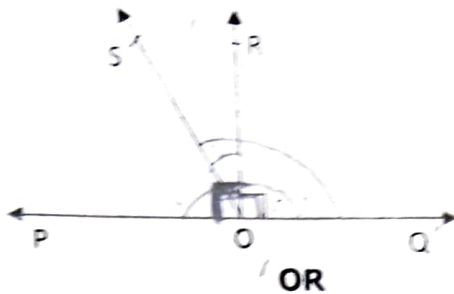
$(a+b)(a^2 - ab + b^2)$
 $(7)(a^2 - 4 + b^2)$
 $7a^2 - 28 + 7b^2$

15. If $a + b = 7$ and $ab = 4$. Find $a^3 + b^3$ 84

16. Draw the graph of the equation $2x + 3y = 12$ on the graph paper.

$(0, 4)$

In the given figure, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2} (\angle QOS - \angle POS)$



If a transversal intersects two lines such that the bisectors of a pair of corresponding angles are parallel, then prove that the two lines are parallel.

Section - D

Find a and b, if $\frac{\sqrt{7}-1}{\sqrt{7}+1} - \frac{\sqrt{7}+1}{\sqrt{7}-1} = a + \sqrt{7}b$

Factorize: $x^3 - 6x^2 + 11x - 6$ $(x-1)(x-2)(x+3)$

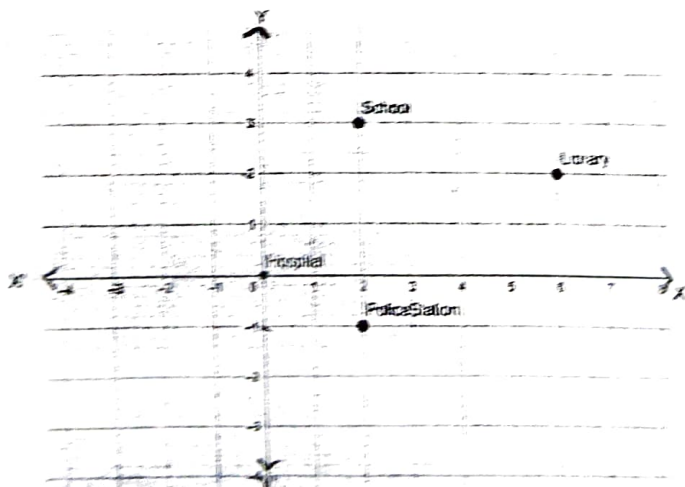
OR

If both $(x-1)$ and $(x+1)$ are factors of $ax^3 + x^2 - 2x + b$, then find a and b.

Section - E

Read the text carefully and answer the following questions

Aditya is a Class IX student residing in a village. One day, he went to a city Hospital along with his grandfather for general checkup. From there he visited three places - School, Library and Police Station. After returning to his village, he plotted a graph by taking Hospital as origin and marked three places on the graph as per his direction of movement and distance. The graph is shown below:



- i) What are the coordinates of library? $(6, 2)$ (1)
- ii) In which quadrant the point $(-1, -7)$ lies? III (1)
- iii) Find the distance between school and the police station. 4 (2)