



TEST-05

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$



MULTIPLE CHOICE TYPE QUESTIONS

For 2025 Exams - Mathematics (041) - Class 11

Select the correct option in the followings. Each question carries 1 mark.

01. For $9(x-2) \geq 25(2-x)$, $x \in$
 - (a) $(\infty, 2]$
 - (b) $[2, \infty)$
 - (c) $(-\infty, 2]$
 - (d) $(\infty, 2)$
02. Consider $5x + 7 > 4x + 3$. Then $x \in$
 - (a) $(4, \infty)$
 - (b) $(-4, \infty)$
 - (c) $(2, \infty)$
 - (d) $(-2, \infty)$
03. For $3x < \frac{x}{3} + 2$, we always have $x \in$
 - (a) $\left(\frac{3}{4}, \infty\right)$
 - (b) $\left(-\frac{3}{4}, \infty\right)$
 - (c) $\left(-\infty, \frac{3}{4}\right)$
 - (d) $\left(-\infty, \frac{3}{4}\right]$
04. Fill in the blanks: If $a < b$ and $c > 0$, then $\left(\frac{a}{c}\right) \underline{\quad} \left(\frac{b}{c}\right)$.
 - (a) $<$
 - (b) \leq
 - (c) $>$
 - (d) \geq
05. If $-4x > 20$ and $x \in \mathbb{Z}^+$, then x belongs to
 - (a) $\{-6, -7, -8, \dots\}$
 - (b) \emptyset
 - (c) $\{-4, -3, -2, -1\}$
 - (d) $\{1, 2, 3, 4, \dots\}$
06. If $\frac{x-3}{x-2} > 0$, then $x \in$
 - (a) $(-\infty, 2) \cup [3, \infty)$
 - (b) $(-\infty, 2] \cup [3, \infty)$
 - (c) $(-\infty, 2) \cup (3, \infty)$
 - (d) $(2, 3)$
07. Solution set for inequality $|x-1| \leq 5$ is
 - (a) $[-6, 4]$
 - (b) $[-4, 0]$
 - (c) $[-4, 6]$
 - (d) $[0, 6]$
08. Solution set for inequality $\frac{1}{x-2} < 0$ is
 - (a) $(2, \infty)$
 - (b) \emptyset
 - (c) $(0, 2)$
 - (d) $(-\infty, 2)$
09. Solution set for inequality $3x+1 > 5x-3$; $x \in \mathbb{N}$ is
 - (a) $(-\infty, 2)$
 - (b) $\{0, 1, 2\}$
 - (c) $\{1\}$
 - (d) \emptyset
10. If $x < 0$ and $y < 0$, then (x, y) lies in
 - (a) I quadrant
 - (b) II quadrant
 - (c) III quadrant
 - (d) IV quadrant
11. If $x^2 > 9$, then x belongs to
 - (a) $(-3, 3)$
 - (b) $(0, 3)$
 - (c) $(3, \infty)$
 - (d) $(-\infty, -3) \cup (3, \infty)$
12. Solution set for inequality $-7 < 3 - 5x \leq 8$ is
 - (a) $(-1, 2)$
 - (b) $(2, 3)$
 - (c) $[-1, 2)$
 - (d) $[2, 3]$
13. If $x > 5$, then
 - (a) $-x < -5$
 - (b) $-x \leq -5$
 - (c) $-x > -5$
 - (d) $-x \geq -5$

14. If $-3x + 17 < -13$, then
 (a) $x \in (10, \infty)$ (b) $x \in [10, \infty)$ (c) $x \in (-\infty, 10]$ (d) $x \in [-10, 10)$

15. Given that x, y and b are real numbers and $x > y, b > 0$, then
 (a) $\frac{x}{b} < \frac{y}{b}$ (b) $\frac{x}{b} \leq \frac{y}{b}$ (c) $\frac{x}{b} > \frac{y}{b}$ (d) $\frac{x}{b} \geq \frac{y}{b}$

16. x and b are real numbers. If $b > 0$ and $|x| > b$, then
 (a) $x \in (-b, \infty)$ (b) $x \in [-\infty, b)$ (c) $x \in (-b, b)$ (d) $x \in (-\infty, -b) \cup (b, \infty)$

17. If $|x - 1| > 5$, then
 (a) $x \in (-4, 6)$ (b) $x \in [-4, 6]$
 (c) $x \in (-\infty, -4) \cup (6, \infty)$ (d) $x \in [-\infty, -4) \cup [6, \infty)$

18. If $|x + 2| \leq 9$, then
 (a) $x \in (-7, 11)$ (b) $x \in [-11, 7]$
 (c) $x \in (-\infty, -7) \cup (11, \infty)$ (d) $x \in (-\infty, -7) \cup [11, \infty)$

19. Consider the system of inequalities $\frac{2x+1}{7x-1} > 5, \frac{x+7}{x-8} > 2$.
 Then which of the following is true?
 (a) $x \in (8, 23)$ (b) $x \in \left(\frac{1}{7}, \frac{6}{33}\right)$ (c) $x \in \emptyset$ (d) $x \in \left(\frac{1}{7}, \frac{6}{33}\right) \cup (8, 23)$

20. If $|x - 1| \leq 5, |x| \geq 2$, then
 (a) $x \in [-4, -2] \cap [2, 6]$ (b) $x \in [-4, -2] \cup [2, 6]$
 (c) $x \in \emptyset$ (d) $x \in [-4, -2]$

21. If $x + 1 \leq -2x + 1$, then $x \in$
 (a) $(-\infty, 0)$ (b) $(-\infty, 0]$ (c) $[0, \infty)$ (d) $(0, \infty)$

22. If $\frac{1}{x} > 1$, then $x \in$
 (a) $(1, \infty)$ (b) $(0, 1)$ (c) $[-\infty, 0) \cup (1, \infty)$ (d) $(-\infty, 0)$

23. For $|x - 2| + 3 \geq 0$, we always have
 (a) $x \in \{ \}$ (b) $x \in (-\infty, \infty)$ (c) $x \in [-1, 5]$ (d) $x \in (-1, 5)$

Question numbers 24 and 25 are Assertion and Reason based questions. Two statements are given, one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer from the codes (a), (b), (c) and (d) as given below.

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- (b) Both Assertion (A) and Reason (R) are true and Reason (R) is **not** the correct explanation of Assertion (A).
- (c) Assertion (A) is true but Reason (R) is false.
- (d) Assertion (A) is false but Reason (R) is true.

24. **Assertion (A)** : Solution of a linear inequality in variable x is represented on the number line as given below.



Then $x \in (2, 4]$.

Reason (R) : For $2x + 18 < 0$, we have $x \in (-\infty, -9)$.

25. **Assertion (A) :** If $2x - 7 > 5 - x$ and $11 - 5x \leq 1$, then $x \in (4, \infty)$.

Reason (R) : For $\left| \frac{3x-4}{2} \right| \leq \frac{5}{12}$, we must have $\frac{19}{18} < x < \frac{29}{18}$.

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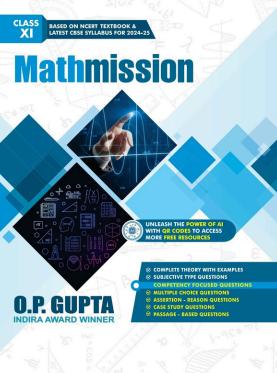
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