



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 $\left(\frac{a}{c}\right) \underline{\hspace{1cm}} \left(\frac{b}{c}\right)$.
 - (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) ϕ
 - (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) ϕ
 - (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) ϕ
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) $x \in \phi$ (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) $x \in \phi$ (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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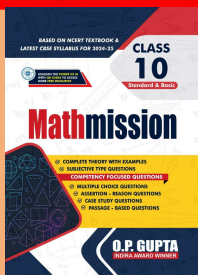
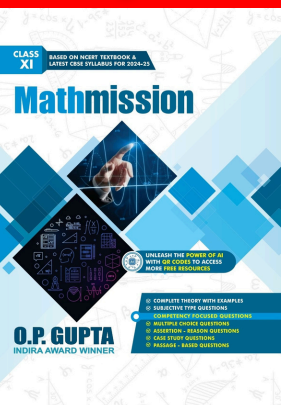
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