

Work Sheet – 01 (Higher Mathematics) for class – Ten, Chapter- Six, Exercise- 6.1 Inequality

Creative Multiplication Choice Questions

1. For the real numbers p, q and r where $p \neq 0, q > r$ then – [D.B.- 20]

- i. $p + q > p + r$ where $p > 0$.
- ii. $pq < pr$ where $p < 0$.
- iii. $\frac{q}{p} = \frac{r}{p}$ where $p > 0$.

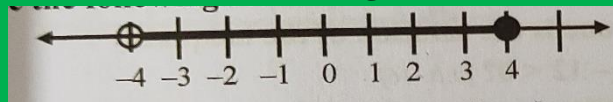
Which one of the following is correct?

- a) i and ii
- b) i and iii
- c) ii and iii
- d) i, ii and iii

2. Which is the solution set of the inequality $x - 10 > 3x + 2$? [My.B.- 20]

- a) $S = \{x \in \mathbb{R} : x < -6\}$
- b) $S = \{x \in \mathbb{R} : x < 6\}$
- c) $S = \{x \in \mathbb{R} : x > 6\}$
- d) $S = \{x \in \mathbb{R} : x > -6\}$

3. Observe the following real line:



Which is the correct according to the above real line? [My.B.- 20]

- a) $(-4, 4]$
- b) $[-4, 4)$
- c) $(-4, 4)$
- d) $[-4, 4]$

4. Which one of the solution set of inequality $x \leq \frac{x}{2} + 1$? [R.B.- 20]

- a) $\{x \in \mathbb{R} : x \leq 2\}$
- b) $\{x \in \mathbb{R} : x \geq 2\}$
- c) $\{x \in \mathbb{R} : x \leq \frac{2}{3}\}$
- d) $\{x \in \mathbb{R} : x \geq \frac{2}{3}\}$

5. Which is the solution set of the inequality $3x + 6 \leq 5x + 10$? [Dj.B.- 20]

- a) $S = \{x \in \mathbb{R} : x > -2\}$
- b) $S = \{x \in \mathbb{R} : x < -2\}$
- c) $S = \{x \in \mathbb{R} : x \leq -2\}$
- d) $S = \{x \in \mathbb{R} : x \geq -2\}$

6. If $a(x + b) < c$ and $a > 0$ then which one of the following is correct? [B.B.- 20]

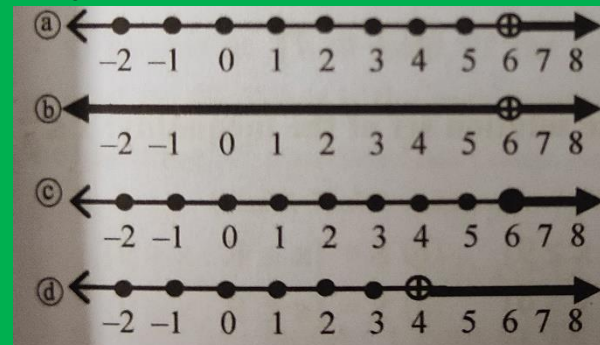
- a) $x > \frac{c}{a} - b$
- b) $x > \frac{c}{a} + b$
- c) $x < \frac{c}{a} - b$
- d) $x < \frac{c}{a} + b$

7. Which of the following is the solution set of the inequality $5x + 10 > 25$? [B.B.- 20]

- a) $S = \{x \in \mathbb{R} : x < 3\}$
- b) $S = \{x \in \mathbb{R} : x > 3\}$
- c) $S = \{x \in \mathbb{R} : x < 7\}$
- d) $S = \{x \in \mathbb{R} : x > 7\}$

8. Which one of the following is the number line of the solution set of the inequality

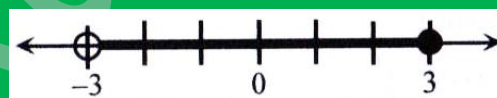
$$\frac{y}{2} \geq \frac{y}{6} + 2? \quad \text{[S.B.- 20]}$$



9. Which one of the following satisfied the inequality $2x + 3y - 3 > 0$? [D.B.- 19]

- a) $(-3, 3)$
- b) $(2, 5)$
- c) $(0, 1)$
- d) $(2, -1)$

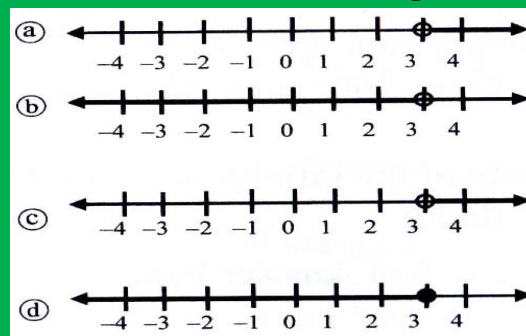
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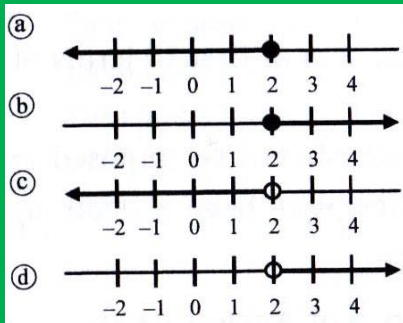
Which is the interval of the above number line? [C.B.- 19]

- a) $[-3, 3]$
- b) $[-3, 3[$
- c) $] -3, 3[$
- d) $] -3, 3]$

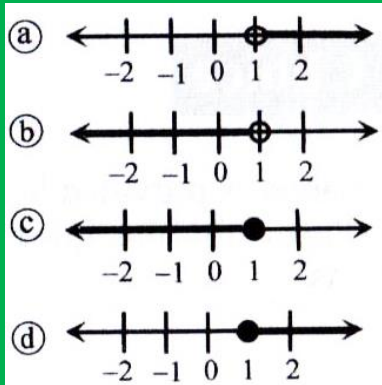
11. Which one is the number line of the solution set of the inequality $x + 5 \leq 8$? [S.B.- 19]



12. Which one is the number line of the solution set of the inequality $\frac{x}{4} + \frac{x}{5} + \frac{x}{12} \leq \frac{16}{15}$? [J.B.- 19]



13. What is the real number line solution of the inequality $5 - 2x \geq 3$? [B.B.- 19]



14. $-4x + 6 > -12$ inequalities. [R.B.- 19]

- i. Another format is $2x - 3 < 6$
- ii. Solution set $S = \{x \in \mathbb{R} : x > \frac{9}{2}\}$
- iii. Solution set $S = \{x \in \mathbb{R} : x < \frac{9}{2}\}$

Which one of the following is correct?

- a) i and ii
- b) i and iii
- c) ii and iii
- d) i, ii and iii

15. The solution of inequality $p(x + q) < r$ [$p \neq 0$] is - [Dj.B.- 19]

- i. $x < \frac{r}{p} - q$ when $p > 0$.
- ii. $x > \frac{r}{p} - q$ when $p < 0$.
- iii. $x \geq \frac{r}{p} - q$ when $p > 0$.

Which one of the following is correct?

- a) i and ii
- b) i and iii
- c) ii and iii
- d) i, ii and iii

16. p , q and r are three real numbers if $p > q$ and $r \neq 0$ then — [C.B.- 19]

- i. $pr > qr$ when $r > 0$.
- ii. $pr < qr$ when $r < 0$.
- iii. $\frac{p}{r} < \frac{q}{r}$ when $r > 0$.

Which one of the following is correct?

- a) i and ii
- b) i and iii
- c) ii and iii
- d) i, ii and iii

17. If a , b , c are three consecutive integers where $a < b < c$ then which one of the following is correct? [All B.- 18]

- a) $1 + ac + b^2$
- b) $1 - ac = b^2$
- c) $\frac{a}{b} = \frac{b}{c}$
- d) $1 + bc = a^2$

18. Which one is the solution set of the inequality $-x + 1 > 21$? [All B.- 18]

- a) $S = \{x \in \mathbb{R} : x < -20\}$
- b) $S = \{x \in \mathbb{R} : x > -20\}$
- c) $S = \{x \in \mathbb{R} : x \leq -20\}$
- d) $S = \{x \in \mathbb{R} : x < 22\}$

19. If $c(x + a) < b$ and $c > 0$ then which one is correct? [S.B.- 17, B.B.- 17]

- a) $x < \frac{b}{c} - a$
- b) $x > \frac{b}{c} - a$
- c) $x < \frac{b}{c} + a$
- d) $x > \frac{b}{c} + a$

20. If $a(x + b) < c$ and $a < 0$ then which one is correct? [B.B.- 16]

- a) $x < \frac{c}{a} - b$
- b) $x < \frac{c}{a} + b$
- c) $x > \frac{c}{a} - b$
- d) $x > \frac{c}{a} + b$

21. What is the solution set of the inequality $x \leq \frac{x}{3} + 4$? [Ctg.B.- 16]

- a) $S = \{x \in \mathbb{R} : x > 6\}$
- b) $S = \{x \in \mathbb{R} : x < 6\}$
- c) $S = \{x \in \mathbb{R} : x \leq 6\}$
- d) $S = \{x \in \mathbb{R} : x \geq 6\}$

22. Which one is the solution set of the inequality $y \leq \frac{y}{4} + 3$? [R.B.- 16]

- a) $S = \{y \in \mathbb{R} : y > 4\}$
- b) $S = \{y \in \mathbb{R} : y < 4\}$
- c) $S = \{y \in \mathbb{R} : y \leq 4\}$
- d) $S = \{y \in \mathbb{R} : y \geq 4\}$

23. If $x - 9 < 3x + 1$ then which one is correct? [R.B.- 15]

- a) $x > -5$
- b) $x < -5$
- c) $x > 5$
- d) $x < 5$

24. Find the solution of the inequality $3x - 4 < 2$. [C.B.- 15]

- a) $x > \frac{-2}{3}$
- b) $x < \frac{-2}{3}$
- c) $x > 2$
- d) $x < 2$

25. Which one is the solution set of the inequality $3x + 8 \geq 20$?

- a) $S = \{x \in \mathbb{N} : x \geq 4\}$
- b) $S = \{x \in \mathbb{Z} : x \geq 4\}$
- c) $S = \{x \in \mathbb{Q} : x \geq 4\}$

26. If $p(x + q) < r$ and $p > 0$ then which one is correct?

- a) $x < \frac{r}{p} - q$ b) $x > \frac{r}{p} - q$
 c) $x < q - \frac{r}{p}$ d) $x > q - \frac{r}{p}$

27. If $a < b$ for negative value of c then which of the following is correct?

- a) $\frac{a}{c} < \frac{b}{c}$ b) $-\frac{a}{c} < \frac{b}{c}$
 c) $-\frac{a}{c} > -\frac{b}{c}$ d) $\frac{a}{c} > \frac{b}{c}$

28. Which one is the solution set of the inequality $x \leq \frac{x}{5} + 8$?

- a) $S = \{x \in \mathbb{R} : x \leq -10\}$
 b) $S = \{x \in \mathbb{R} : x \geq -10\}$
 c) $S = \{x \in \mathbb{R} : x \leq 10\}$
 d) $S = \{x \in \mathbb{R} : x \geq 10\}$

29. If $x - 9 < 3x + 1$ then which one is correct?

- a) $x > -5$ b) $x < -5$
 c) $x > 5$ d) $x < 5$

30. Which one is correct?

- a) If $a > b$ then $a + c > b + c$.
 b) If $a < b$ then $a < b + c$.
 c) If $a > b$ then $ac < bc$.
 d) If $a < b$ then $ac > bc$.

31. Which one of the following is the solution set of $(x + 3)(x - 4) \geq 0$?

- a) $-3 \leq x \leq 4$
 b) $-3 < x < 4$
 c) $x \leq -3$ and $x \geq 4$
 d) $\{-3, 4\}$

32. The solution of $x - 9 > 3x + 1$ is —

- a) $x < -5$ b) $x \leq 5$
 c) $x > -5$ d) $x \geq -5$

33. If $a > b$ and $x > 0$ then -

- i. $a - x < b - x$
 ii. $a - b > 0$
 iii. $a \cdot x > b \cdot x$

Which one of the following is correct?

- a) i and ii b) ii and iii
 c) i and iii d) i, ii and iii

34. If $a > b$ then -

- i. $\frac{1}{a} > \frac{1}{b}$
 ii. $\frac{1}{a} < \frac{1}{b}$
 iii. $a + c > b + c$

Which one of the following is correct?

- a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii

35. For $5(3 - 2y) \leq 3(4 - 3y)$ then -

- i. $-y \leq -3$
 ii. $y \geq 3$
 iii. $y \leq 3$

Which one of the following is correct?

- a) i and ii b) ii and iii
 c) i and iii d) i, ii and iii

36. If $a > b$ and for any c -

- i. $a + c > b + c$
 ii. $ac > bc$ when $c > 0$
 iii. $\frac{a}{c} > \frac{b}{c}$ when $c < 0$

Which one of the following is correct?

- a) i and ii b) ii and iii
 c) i and iii d) i, ii and iii

37. If $a < b$ for negative value of c which of the following is correct?

- a) $\frac{a}{c} < \frac{b}{c}$ b) $\frac{a}{c} > \frac{b}{c}$
 c) $\frac{c}{a} < \frac{c}{b}$ d) $\frac{c}{a} > \frac{c}{b}$

38. If x, y are proper fraction and $x > y$ then finds the correct relation.

- a) $\frac{-1}{x} > \frac{1}{y}$ b) $\frac{1}{x} > \frac{1}{y}$
 c) $\frac{1}{x} < \frac{1}{y}$ d) $\frac{1}{x^2} > \frac{1}{y^2}$

39. If $a < b$ then which of the following is correct for the negative value of c ?

- a) $ac < bc$ b) $ac > bc$
 c) $\frac{a}{c} < \frac{b}{c}$ d) $\frac{c}{a} > \frac{c}{b}$

40. If $a < b$ then which of the following is correct for the negative value of c ?

- a) $\frac{a}{c} < \frac{b}{c}$ b) $\frac{a}{c} > \frac{b}{c}$
 c) $\frac{c}{a} > \frac{c}{b}$ d) $\frac{a}{c} > \frac{c}{b}$

41. If $a < b$ then which of the following is correct for the positive value of c ?

- a) $ac < bc$ b) $ac > bc$
 c) $\frac{c}{a} < \frac{c}{b}$ d) $\frac{a}{c} > \frac{b}{c}$

42. Which one is true for the equation $y = x^2 - 8x + 20$?

- a) $y \leq 0$ b) $y \leq 4$
 c) $y \geq 0$ d) $y \geq 4$

43.