

Work Sheet – 04 (Higher Mathematics) for class – Ten (12.10.2020), Chapter- Six Exercise - 6.3, Inequality

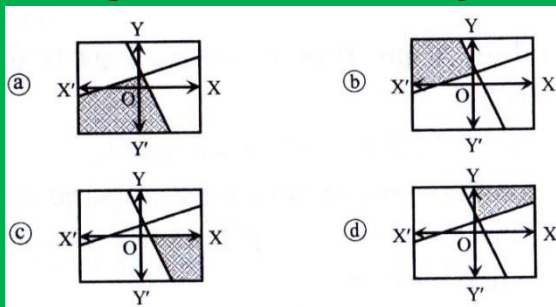
Creative Multiplication Choice Questions

Answer to the questions no. (1 – 2) with the given below information:
 $2x + y - 6 < 0$ and $x - 2y + 6 > 0$ are two inequalities.

1. Which is the solution set of the second inequality when $y = \frac{3}{4}$? [Ctg.B.- 19]

- a) $S = \{x \in \mathbb{R} : x > \frac{15}{2}\}$
- b) $S = \{x \in \mathbb{R} : x > \frac{-15}{2}\}$
- c) $S = \{x \in \mathbb{R} : x > \frac{9}{2}\}$
- d) $S = \{x \in \mathbb{R} : x > \frac{-9}{2}\}$

2. Which shaded portion is the solution of two inequalities? [Ctg.B.- 19]

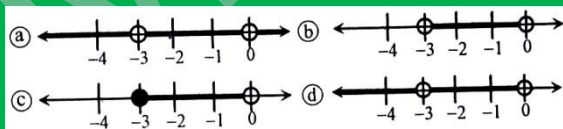


3. Which one is the solution of the inequality $3x - 2y - 12 < 0$? [J.B.- 16]

- a) (4, 0)
- b) (4, 3)
- c) (4, -3)
- d) (0, 6)

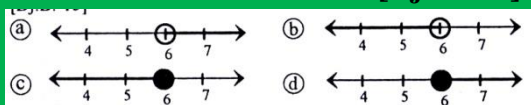
4. Given that, $-3 \leq x < 0$ then which one of the correct number lines?

[D.B.- 16]



5. If $y - 4 < 2$ then what will be the number line of this equation?

[Dj.B.- 16]



6. If $x \leq \frac{3x}{7} + 4$ then which one is the solution set to this inequality?

[Dj.B.- 16]

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

7. If $x - y + 2 \geq 0$ then $x = -1$ for what value of y the inequality is satisfied? [C.B.- 15]

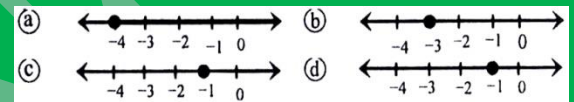
- a) 4
- b) 3
- c) 2
- d) 1

8. Which one is the solution set of the inequality $x \leq \frac{x}{3} + 4$? [Ctg.B.- 15]

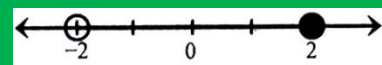
- a) $S = \{x \in \mathbb{R} : x \leq -6\}$
- b) $S = \{x \in \mathbb{R} : x \geq -6\}$
- c) $S = \{x \in \mathbb{R} : x \leq 6\}$
- d) $S = \{x \in \mathbb{R} : x > 6\}$

Answer to the questions No. (9 – 10) considering the inequality $x \leq \frac{5x}{4} + 1$.

9. Which one is the number line of the solution set? [J.B.- 15]



10.



Which of the following is true based on the above number line? [B.B.- 15]

- a) $[-2, 2]$
- b) $] - 2, 2]$
- c) $] - 2, 2[$
- d) $[-2, 2[$

11. Which one is the solution set of the inequality $5x + 5 > 25$?

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

12. For which value of x , it will be $y = 0$ for the equation $x + y = - 2$?

- a) 2
- b) 0
- c) 4
- d) -2

13. Which are the correct co-ordinates of the equation $2xy + y = 3$?

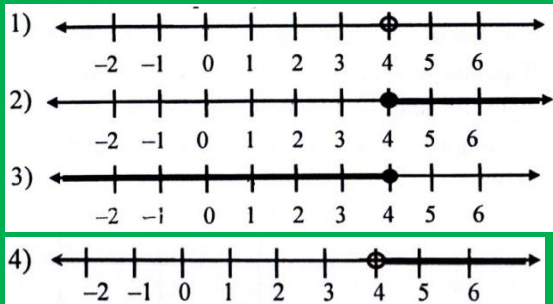
- a) (1, -1), (2, -1)
- b) (1, 1), (-1, -3)
- c) (1, 1), (-2, 1)
- d) (-1, 1), (2, -1)

Answer to the questions No. (14 - 15) form the inequality given below: $x \leq \frac{x}{4} + 3$.

14. Which one is the solution set of the inequality?

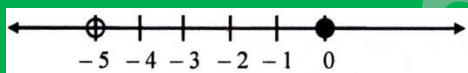
- a) $S = \{x \in \mathbb{R} : x > 4\}$
- b) $S = \{x \in \mathbb{R} : x < 4\}$
- c) $S = \{x \in \mathbb{R} : x \leq 4\}$
- d) $S = \{x \in \mathbb{R} : x \geq 4\}$

15. Which one is the number line of the solution set of the above inequality?



16. For the inequality $3x + 6 > 9$ then -

- i. Dividing both sides by 3, we get $x + 2 > 3$.
- ii. Solution set = $\{x \in \mathbb{R} : x > 1\}$
- iii. Solution set in number line:



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. The ages of Rita, Mita and Bithi are x , $2x$ and $3x$ years respectively. If the sum of their age is not more than 60 years.

- i. The Mathematical expression of the problem is $x + 2x + 3x \leq 60$.
- ii. Age of Rita is ≤ 10 years.
- iii. Age of Mita is > 20 years.

Which one of the following is correct?

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

18. a , b and c are three real numbers. If $a > b$ and $c \neq 0$

- i. $ac > bc$, when $c > 0$.
- 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) i and iii
- c) ii and iii
- d) i, ii and iii

19. If the inequality is $x \geq \frac{x}{5} - 2$ then which one is the solution set of the inequality.

- a) $S = \{x \in \mathbb{R} : x \geq -\frac{5}{2}\}$
- b) $S = \{x \in \mathbb{R} : x \geq -\frac{2}{5}\}$
- c) $S = \{x \in \mathbb{R} : x \leq \frac{5}{2}\}$
- d) $S = \{x \in \mathbb{R} : x \geq \frac{2}{5}\}$

20. What is the graph of the equation of the form $ax + by + C = 0$?

- a) Circle
- b) straight line
- c) triangle
- d) curve

21. At which point the equation $x + 2y - 3 = 0$ intersects the x-axis?

- a) (3, 2)
- b) (3, 0)
- c) (2, 0)
- d) $(\frac{3}{2}, 0)$

22. At which point the equation $x - 3y - 6 = 0$ intersects the y-axis?

- a) (2, 0)
- b) (0, -2)
- c) (0, 6)
- d) (0, -6)

23. Which are the co-ordinates that lie on the equation $2y - 3x = 5$?

- a) (4, 1), (-1, 1)
- b) (4, 1), (1, -1)
- c) (1, 4), (-1, 1)
- d) (1, -4), (-1, 1)

24. For which value of (x, y) the inequality $5x - 3y < 0$ is satisfied?

- a) (1, 1)
- b) (2, 2)
- c) (3, 3)
- d) (1, 2)

25. Which of the following points lies on the inequality $x + y - 3 > 0$?

- a) (0, 0)
- b) (1, 0)
- c) (0, 2)
- d) (2, 2)

26. If $c(x + a) < b$ and $c > 0$ then which one of the following is correct?

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