



MATHS

BOOKS - S CHAND MATHS (ENGLISH)

LINEAR INEQUALITIES

Example

1. If $\frac{x}{4} < \frac{5x - 2}{3} - \frac{7x - 3}{5}$, $x \in R$ then

A. $x \in (-\infty, 4]$

B. $x \in (-\infty, 4)$

C. $x \in (4, \infty)$

D. $x \in [4, \infty)$

Answer: B



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2. The solution set of

$$-12 < 4 - \frac{3x}{-5} \leq 2, x \in R \text{ is}$$

A. $\left(\frac{10}{3}, \frac{80}{3}\right]$

B. $\left[-\frac{80}{3}, \frac{10}{3} \right)$

C. $\left(-\frac{80}{3}, -\frac{10}{3} \right]$

D. $\left(\frac{80}{3}, -\frac{10}{3} \right)$

Answer: C



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3. If $3 - 2x^2 > 5x$, $x \in R$, then the set of solutions is

A. A. $\left(-\infty, -\frac{1}{2} \right)$

B. B. $(3, \infty)$

C. C. $\left(-\frac{1}{2}, 3\right)$

D. D. $\left[-\frac{1}{2}, 3\right]$

Answer: C



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4. If $\frac{2x + 1}{x - 2} \leq 1, x \in R$, then the solution

set is

A. $\left(-\infty, \frac{1}{2}\right)$

B. $\left(-\infty, -\frac{1}{2} \right]$

C. $[-3, 2]$

D. $[-3, 2)$

Answer: D



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Multiple Choice Question

1. If $\frac{1}{2} \left(\frac{3}{5}x + 4 \right) \geq \frac{1}{3}(x - 6)$, $x \in R$, then

A. (a) $x \in (- \infty, 120]$

B. (b) $x \in [120, \infty)$

C. (c) $x \in (- \infty, 120)$

D. (d) $x \in (120, \infty)$

Answer: A



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2. If x is a negative integer , then the solution set of $-12x > 30$ is

A. A. $\{-2, -1\}$

B. B. $\{\dots, -5, -4, -3\}$

C. C. $\{\dots, -5, -4, -3, -2\}$

D. D. $\{-2, -1, 0, 1, 2\dots\}$

Answer: B



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3. The solution set of system of linear inequalities

$$2(x + 1) \leq x + 5, 3(x + 2) > 2 - x, x \in R$$

is

A. $[-1, 3]$

B. $(-1, 3)$

C. $(-1, 3]$

D. $[-1, 3)$

Answer: C



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4. The solution set of

$$6 \leq -3(2x - 4) < 12, x \in R \text{ is}$$

A. $(0, 1]$

B. $[1, 0)$

C. $(0, 1)$

D. $[0, 1]$

Answer: A



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5. The length of rectangle is double the breadth , If the minimum perimeter of the rectangle is 120 cm , then

A. breadth $>$ 20 cm

B. breadth $<$ 20 cm

C. breadth \geq 20 cm

D. breadth \leq 20 cm

Answer: C



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6. If $x \leq 8$, then

A. $-x < \frac{y}{b}$

B. $-x \geq -8$

C. $-x < -8$

D. $-x > -8$

Answer: B



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7. Given that x , y and b are real numbers and

$x \leq y$, $b < 0$ then

A. A. $\frac{x}{b} < \frac{y}{b}$

B. B. $\frac{x}{b} \leq \frac{y}{b}$

C. C. $\frac{x}{b} > \frac{y}{b}$

D. D. $\frac{x}{b} \geq \frac{y}{b}$

Answer: C



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8. Given that x, y and b real are real numbers

and $x \geq y, b > 0$, then

A. A. $\frac{x}{b} \geq \frac{y}{b}$

B. B. $\frac{x}{b} > \frac{y}{b}$

C. C. $\frac{x}{b} \leq \frac{y}{b}$

D. D. $\frac{x}{b} < \frac{y}{b}$

Answer: A



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9. The solution of the linear inequality in x represented on number line as



A. $x \in [4, \infty)$

B. $x \in (4, \infty)$

C. $x \in (-\infty, 4)$

D. $x \in (-\infty, 4]$

Answer: B



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10. The solution of the linear inequality in x represented on number line as



A. A. $\left(-\infty, -\frac{5}{3} \right]$

B. B. $\left(-\infty, -\frac{5}{3} \right)$

C. C. $\left(-\frac{5}{3}, \infty \right)$

D. D. $\left[-\frac{5}{3}, \infty \right)$

Answer: A



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11. The solution of the linear inequality in x represented on number line as



A. $(-\infty, -2) \cup [11, \infty)$

B. $(-\infty, -2] \cup (11, \infty)$

C. $(-2, 11)$

D. $(-2, 11]$

Answer: D



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12. The solution of system of linear inequalities in x represented on line as



(i) $x \in (- \infty, - 4) \cup [3, \infty)$

(ii) $x \in (- \infty, - 4] \cup (5, \infty)$

(iii) $x \in (- \infty, - 3) \cup (5, \infty)$

(iv) $x \in (- \infty, - 4) \cup [5, \infty)$

A. $x \in (-\infty, -4) \cup [3, \infty)$

B. $x \in (-\infty, -4] \cup (5, \infty)$

C. $x \in (-\infty, -3) \cup (5, \infty)$

D. $x \in (-\infty, -4) \cup [5, \infty)$

Answer: B



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13. If $\frac{1}{3x - 4} < 0$, then (i) $x \in \left(\frac{4}{3}, \infty\right)$ (ii)
 $x \in \left(-\infty, \frac{4}{3}\right)$ (iii) $x \in (0, \infty)$ (iv)

$$x \in \left(0, \frac{4}{3}\right)$$

A. $x \in \left(\frac{4}{3}, \infty\right)$

B. $x \in \left(-\infty, \frac{4}{3}\right)$

C. $x \in (0, \infty)$

D. $x \in \left(0, \frac{4}{3}\right)$

Answer: B



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14. If $\frac{1}{x} < 1$ then the solution set is

A. $(1, \infty)$

B. $[1, \infty)$

C. $(-\infty, 0) \cup [1, \infty)$

D. $(-\infty, 0) \cup (1, \infty)$

Answer: D



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15. If $\frac{1}{x-1} \geq 2$, then the solution set is

A. A. $\left(1, \frac{3}{2}\right]$

B. B. $\left[1, \frac{3}{2}\right]$

C. C. $\left(1, \frac{3}{2}\right)$

D. D. $(-\infty, -3] \cup \left[\frac{1}{2}, \infty\right)$

Answer: B



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16. The solution set of the quadratic inequality

$$3 - 2x^2 \leq 5x \text{ is}$$

A. (a) $(-\infty, -3]$

B. (b) $\left[\frac{1}{2}, \infty\right)$

C. (c) $\left[-3, \frac{1}{2}\right]$

D. (d) $(-\infty, -3] \cup \left[\frac{1}{2}, \infty\right)$

Answer: D



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