

3.4 Inequalities Activity

Section 1: Solve the inequality and express the solution in interval notation.

1. $2x + 4 \leq 7$

4. $5 - 7x < 2x - 4$

2. $3 - 5x < 13$

5. $2 < 3x - 4 < 8$

3. $6x + 3 \leq x - 5$

6. $0 < 5 - 2x \leq 11$

Section 2: Solve the inequality and express the solution in interval notation.

7. $2x + 7(3x - 2) < 2(x - 1)$

8. $\frac{x + 1}{2} - 3x \leq \frac{x + 5}{3}$

9. $2x + 3 \leq 5x + 6 < -3x + 7$

10. $3 - x < 2x + 1 \leq 3x - 4$

Section 3: Literal inequalities. Solve each inequality for x .

11. $ax - b < c$

12. $0 < -cx - d < a$

Section 4: Solve the following quadratic inequalities.

13. $x^2 - 4x + 3 \leq 0$

15. $8 + x - x^2 \leq 0$

14. $x^2 + 9x + 15 \geq 0$

16. $x^2 + 8x + 20 \geq 0$

Section 5: Solve the following rational inequalities.

17. $\frac{5x - 2}{x + 1} < 0$

18. $\frac{2x - 1}{x - 2} \geq 1$

19. $\frac{x - 2}{x - 1} - 1 \leq x - 3$

