

Linear Inequalities and Absolute  
Value Inequalities

1. Express each interval in set-builder notation and graph the interval on a number line:  
(Similar to p.185 #4)

$$[-2,5)$$

2. Express each interval in set-builder notation and graph the interval on a number line:  
(Similar to p.185 #12)

$$(-\infty,4)$$

3. Use graphs to find each set:  
(Similar to p.185 #16-26)

$$(-5,2) \cap [-3,4]$$

4. Use graphs to find each set:  
(Similar to p.185 #16-26)

$$(-5,2) \cup [-3,4]$$

5. In all exercises, other than the empty set, use interval notation to express solution sets and graph each solution set on a number line.  
(Similar to p.185 #28)

$$3x - 2 < 13$$

6. In all exercises, other than the empty set, use interval notation to express solution sets and graph each solution set on a number line.

(Similar to p.185 #34)

$$10x + 35 \leq 4x - 11$$

7. In all exercises, other than the empty set, use interval notation to express solution sets and graph each solution set on a number line.

(Similar to p.185 #38)

$$-8(x + 3) > 3x + 20$$

8. In all exercises, other than the empty set, use interval notation to express solution sets and graph each solution set on a number line.

(Similar to p.185 #46)

$$\frac{3x - 2}{5} + 2 \geq \frac{4x - 1}{15}$$

9. Solve each compound inequality:  
(Similar to p.185 #56)

$$8 \leq 2x - 4 < 23$$

10. Solve each absolute value inequality:

(Similar to p.186 #64)

$$|6x - 1| < 13$$

11. Solve each absolute value inequality:

(Similar to p.186 #74)

$$|7x + 2| > 19$$

12. Solve each absolute value inequality:  
(Similar to p.186 #82)

$$-4|x + 2| \geq -24$$

13. Solve each absolute value inequality:  
(Similar to p.186 #90)

$$3 < |5 - x|$$

14. Solve each absolute value inequality:  
(Similar to p.186 #92)

$$1 < \left| x - \frac{2}{3} \right| + \frac{8}{3}$$

15. Solve each absolute value inequality:  
(Similar to p.186 #94)

$$\left| 5 - \frac{x}{2} \right| - 3 \leq 3$$