

Section 4.3 Solving Compound Inequalities

1. Which of the following is equivalent to $3 < x + 5 < 9$?

- (a) $3 < x < 4$
- (b) $-2 < x < 9$
- (c) $-2 < x < 4$
- (d) $-2 < x < 14$
- (e) $8 < x < 4$

2. Solve the inequality: $4 < 2 - 2x \leq 14$

- (a) $-1 > x \geq -6$
- (b) $1 > x \geq -6$
- (c) $-2 > x \geq -12$
- (d) $-1 > x \geq -12$

3. Solve: $x^2 - 7x + 10 > 0$.

- (a) $(-\infty, 2] \cup [5, \infty)$
- (b) $(-\infty, 2) \cup (5, \infty)$
- (c) $[2, 5]$
- (d) $(2, 5)$

4. Solve: $\frac{x+2}{x+1} \geq 4$.

- (a) $[-\frac{2}{3}, \infty)$
- (b) $(-\infty, -\frac{2}{3}]$
- (c) $[-1, -\frac{2}{3}]$

(d) $(-1, -\frac{2}{3}]$

5. Solve: $\frac{(x+1)(2-x)(x-3)^2}{(x^2+16)(x+5)} \geq 0$.

(a) $(-\infty, -5] \cup [-1, 2] \cup \{3\}$

(b) $(-\infty, -5] \cup [-1, 2]$

(c) $(-\infty, -5) \cup [-1, 2] \cup \{3\}$

(d) $(-\infty, -5) \cup [-1, 2]$