# Simplifying Interval Notation

**A. Simplify the given interval notation.**

1) $(-\infty, 3) \cup (-4, \infty)$

    Simpliest Form: $(-\infty, \infty)$

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

    Simpliest Form: $(-\infty, \infty)$

3) $(-\infty, 3] \cup (0, 11]$

    Simpliest Form: $(-\infty, 11]$

4) $[-9, 4] \cup [-3, -1]$

    Simpliest Form: $[-9, 4]$

5) $(-\infty, 2] \cup [2, 12) \cup (7, \infty)$

    Simpliest Form: $(-\infty, \infty)$

6) $(-\infty, 4] \cup [1, 10) \cup (7, \infty)$

    Simpliest Form: $(-\infty, \infty)$

# Polynomial Inequality

**B. Give the solution set to the given polynomial inequality.**

1) $(x-1)(x+1)^2(x+2) \geq 0$

    Solution Set: $(-\infty, -2] \cup \{-1\} \cup [1, \infty)$

2) $-(x-2)(x-1)^2(x+1)(x+3) \leq 0$

    Solution Set: $[-3, -1] \cup \{1\} \cup [2, \infty)$

3) $(x+1)(x+2)(x+3) > 0$

6) $-(x-1)^2(x+3) \leq 0$

Solution Set: $(-3, -2) \cup (-1, \infty)$

Solution Set: $[-3, \infty)$

4) $(x-1)(x+1)(x+2)^3 < 0$

7) $-(x+1)^2(x+2) \leq 0$

Solution Set: $(-\infty, -2) \cup (-1, 1)$

Solution Set: $[-2, \infty)$

5) $-(x-2)(x-1)(x+3) < 0$

8) $-(x-1)^2(x+1)(x+2) > 0$

Solution Set: $(-3, 1) \cup (2, \infty)$

Solution Set: $(-2, -1)$