Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 6] \cup [-5, \infty)$

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

2) $[-9, 5] \cup [-4, 4]$

Simpliest Form: $[-9, 5]$

3) $(-\infty, 2) \cup [-8, 0]$

Simpliest Form: $(-\infty, 2)$

4) $[-8, 3) \cup [-8, 5)$

Simpliest Form: $[-8, 5)$

5) $(-\infty, 3] \cup [2, 10) \cup (5, \infty)$

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

6) $(-\infty, 3] \cup [4, 11) \cup (6, \infty)$

Simpliest Form: $(-\infty, 3] \cup [4, \infty)$

Polynomial Inequality

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

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

Solution Set: $[-3, 2]$

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

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

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

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

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

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

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

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

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

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

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

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

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

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