Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 2) \cup (4, \infty)$

4) $(-\infty, 3) \cup (2, \infty)$

Simpliest Form: $(-\infty, 2) \cup (4, \infty)$

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

2) $[-2, 6) \cup [-6, 3)$

5) $(-\infty, 4) \cup [5, 12] \cup [5, \infty)$

Simpliest Form: $[-6, 6)$

Simpliest Form: $(-\infty, 4) \cup [5, \infty)$

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

6) $(-\infty, 3] \cup [5, 11) \cup (6, \infty)$

Simpliest Form: $(-5, 4]$

Simpliest Form: $(-\infty, 3] \cup [5, \infty)$

Polynomial Inequality

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

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

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

Solution Set: $(-\infty, \infty)$

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

1

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

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

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

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

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

Solution Set: $\{-2, -1\}$

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

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

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

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

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

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