Name _____ Student No._____ G___/____ Date: _____Score: _____
Nickname: _____ Worksheet No.: _____

Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 6] \cup (-2, 11]$

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

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

Simpliest Form: $(-5, 3]$

3) $(-\infty, 4] \cup (3, 12]$

Simpliest Form: $(-\infty, 12]$

4) $(-\infty, 2) \cup (0, \infty)$

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

5) $(-\infty, 2) \cup [7, 9] \cup [6, \infty)$

Simpliest Form: $(-\infty, 2) \cup [6, \infty)$

6) $(-\infty, 2] \cup [7, 12) \cup (6, \infty)$

Simpliest Form: $(-\infty, 2] \cup (6, \infty)$

Polynomial Inequality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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