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

Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 0] \cup [-4, \infty)$

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

2) $(-3, 4] \cup (-8, 5]$

Simpliest Form: $(-8, 5]$

3) $(-\infty, 1] \cup (-5, \infty)$

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

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

Simpliest Form: $[-5, 4]$

5) $(-\infty, 4) \cup [4, 9] \cup [5, \infty)$

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

6) $(-\infty, 2] \cup [1, 10) \cup (7, \infty)$

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

Polynomial Inequality

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

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

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

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

Solution Set: $(-3, -2)$

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

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

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

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

5) $-(x-2)(x+2)(x+3) > 0$

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

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

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

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

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

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

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