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

Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 4) \cup (6, \infty)$

Simplest Form: $(-\infty, 4) \cup (6, \infty)$

2) $(-\infty, 2) \cup (-5, \infty)$

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

3) $[-10, 8] \cup [-6, 4]$

Simplest Form: $[-10, 8]$

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

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

5) $(-\infty, 2] \cup [1, 12) \cup (5, \infty)$

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

6) $(-\infty, 3) \cup [1, 11] \cup [7, \infty)$

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

Polynomial Inequality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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