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

# Simplifying Interval Notation

## A. Simplify the given interval notation.

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

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

2) $[-3, 6) \cup [-4, 1)$

Simpliest Form: $[-4, 6)$

3) $(-1, 4] \cup (-3, 5]$

Simpliest Form: $(-3, 5]$

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

Simpliest Form: $[-8, 5)$

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

Simpliest Form: $(-\infty, 2] \cup (5, \infty)$

6) $(-\infty, 2) \cup [4, 11] \cup [5, \infty)$

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

# Polynomial Inequality

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

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

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

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

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

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

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

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

Solution Set: $(-1,2)$

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

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

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

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

7) $(x+1)^4(x+3) < 0$

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

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

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