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

# Simplifying Interval Notation

## A. Simplify the given interval notation.

1) $[-9, 5] \cup [-7, 2]$

Simpliest Form: $[-9, 5]$

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

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

3) $(-\infty, 6] \cup (0, 10]$

Simpliest Form: $(-\infty, 10]$

4) $(-\infty, 3) \cup (0, \infty)$

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

5) $(-\infty, 2] \cup [3, 9) \cup (6, \infty)$

Simpliest Form: $(-\infty, 2] \cup [3, \infty)$

6) $(-\infty, 4] \cup [6, 10) \cup (6, \infty)$

Simpliest Form: $(-\infty, 4] \cup [6, \infty)$

# Polynomial Inequality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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