

Name \_\_\_\_\_ Student No. \_\_\_\_\_ G\_\_\_\_/\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_  
Nickname: \_\_\_\_\_ Worksheet No.: \_\_\_\_\_

## Simplifying Interval Notation

### A. Simplify the given interval notation.

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

4)  $(-1, 2] \cup (-6, -1]$

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

Simpliest Form:  $(-6, 2]$

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

5)  $(-\infty, 3] \cup [3, 12) \cup (5, \infty)$

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

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

3)  $(-\infty, 3) \cup [-7, 4]$

6)  $(-\infty, 3) \cup [1, 12] \cup [6, \infty)$

Simpliest Form:  $(-\infty, 4]$

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

## Polynomial Inequality

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

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

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

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

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

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

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

$$4) (x-1)^3 > 0$$

$$\text{Solution Set: } (1, \infty)$$

$$5) (x-1)(x+2)(x+3) < 0$$

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

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

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

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

$$\text{Solution Set: } (-1, 1)$$

$$8) (x-1)^2(x+1)(x+3) \leq 0$$

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