

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

## Simplifying Interval Notation

### A. Simplify the given interval notation.

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

4)  $(-\infty, 6] \cup (0, 11]$

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

Simpliest Form:  $(-\infty, 11]$

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

5)  $(-\infty, 4) \cup [1, 9] \cup [5, \infty)$

Simpliest Form:  $[-1, \infty)$

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

3)  $(-\infty, 4) \cup [-6, -1]$

6)  $(-\infty, 2) \cup [6, 12] \cup [5, \infty)$

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

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

## Polynomial Inequality

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

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

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

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

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

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

$$6) (x+1)^3(x+2)^2 \geq 0$$

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

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

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

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

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

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

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

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

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

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