

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

## Simplifying Interval Notation

### A. Simplify the given interval notation.

1)  $(-1, 2] \cup (-8, 2]$

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

Simpliest Form:  $(-8, 2]$

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

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

5)  $(-\infty, 3) \cup [4, 12] \cup [6, \infty)$

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

Simpliest Form:  $(-\infty, 3) \cup [4, \infty)$

3)  $[-10, 5] \cup [-1, 2]$

6)  $(-\infty, 4] \cup [2, 10) \cup (6, \infty)$

Simpliest Form:  $[-10, 5]$

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

## Polynomial Inequality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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