

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

## Simplifying Interval Notation

### A. Simplify the given interval notation.

1)  $[-3, 2) \cup [1, \infty)$

4)  $[-8, 8] \cup [-4, 4]$

Simpliest Form:

Simpliest Form:

2)  $(-\infty, 2) \cup (0, \infty)$

5)  $(-\infty, 2) \cup [6, 10] \cup [5, \infty)$

Simpliest Form:

Simpliest Form:

3)  $[-8, 6] \cup [-5, 2]$

6)  $(-\infty, 4] \cup [2, 12) \cup (6, \infty)$

Simpliest Form:

Simpliest Form:

## Polynomial Inequality

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

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

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

Solution Set:

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

$$6) \ -(x-2)(x+2)(x+3) < 0$$

Solution Set:

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

Solution Set:

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

Solution Set:

C. Complete the given table below by converting set representation in different forms.

1	$\{x \in \mathbb{R} \mid x \geq 3 \text{ or } x \leq -3\}$		
2		$[-6, -1] \cup [1, 5)$	
3			
4	$\{x \in \mathbb{R} \mid -1 \leq x \leq 4 \text{ or } x < -4\}$		
5		$(-\infty, -3] \cup (2, \infty)$	
6			
7	$\{x \in \mathbb{R} \mid x \leq -3, x = 0, x > 4\}$		
8		$(-\infty, 0) \cup \{2\} \cup [3, 4)$	
9			
10	$\{x \in \mathbb{R} \mid x < -5, -5 < x < 2, x > 2\}$		