

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

## Simplifying Interval Notation

### A. Simplify the given interval notation.

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

4)  $[-2, 4] \cup [-4, 4]$

Simpliest Form:

Simpliest Form:

2)  $[-8, 3] \cup [-5, 0]$

5)  $(-\infty, 4) \cup [2, 9] \cup [7, \infty)$

Simpliest Form:

Simpliest Form:

3)  $[-10, 5] \cup [-2, 4]$

6)  $(-\infty, 2) \cup [5, 9] \cup [7, \infty)$

Simpliest Form:

Simpliest Form:

## Polynomial Inequality

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

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

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

Solution Set:

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

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	$\{x \in \mathbb{R} \mid x < -5, -5 < x < 2, x > 2\}$		