

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:

Simpliest Form:

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

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

Simpliest Form:

Simpliest Form:

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

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

Simpliest Form:

Simpliest Form:

## 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:

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

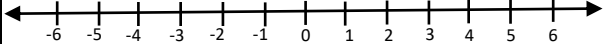
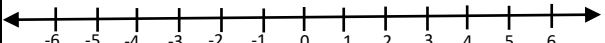
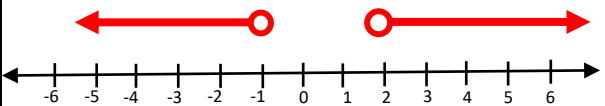
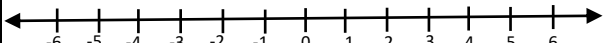
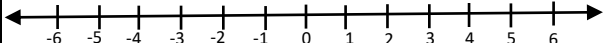
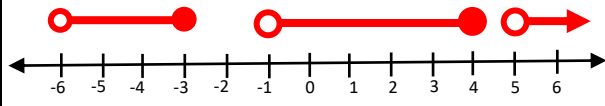
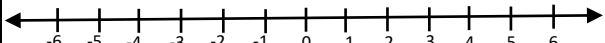
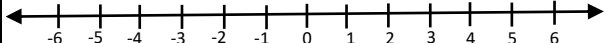
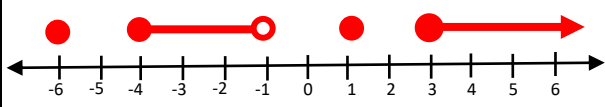
$$7) \ (x-1)(x+1)^2(x+2)(x+3) > 0$$

Solution Set:

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

Solution Set:

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

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