

Name _____ Student No. _____ G____/____ Date: _____ Score: _____
Nickname: _____ Worksheet No.: _____

Simplifying Interval Notation

A. Simplify the given interval notation.

1) $(-\infty, 4) \cup (5, \infty)$

4) $(-4, 2] \cup (-7, 3]$

Simpliest Form:

Simpliest Form:

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

5) $(-\infty, 4] \cup [5, 10) \cup (6, \infty)$

Simpliest Form:

Simpliest Form:

3) $(-3, 4] \cup (-3, 4]$

6) $(-\infty, 4] \cup [3, 12) \cup (7, \infty)$

Simpliest Form:

Simpliest Form:

Polynomial Inequality

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

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

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

Solution Set:

Solution Set:

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

Solution Set:

$$4) \ -(x-2)(x+2)(x+3) < 0$$

Solution Set:

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

Solution Set:

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

Solution Set:

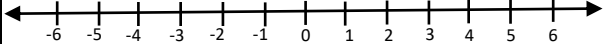
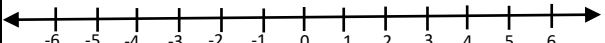
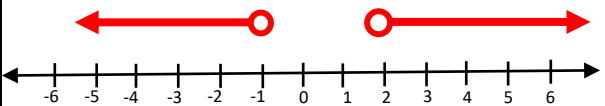
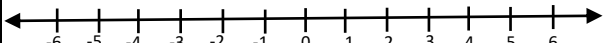
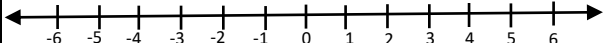
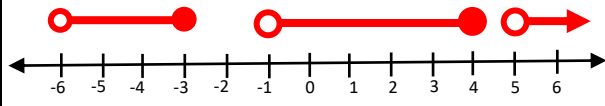
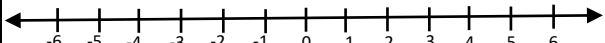
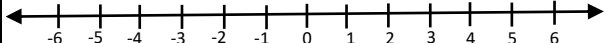
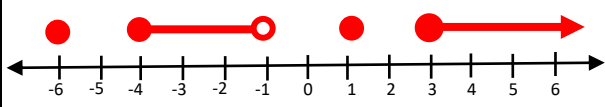
$$7) \ (x-1)(x+1)^2(x+3)^2 \leq 0$$

Solution Set:

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

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	$\{x \in \mathbb{R} \mid x \leq -4, -4 \leq x < 3, x > 3\}$		