

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

Simplifying Interval Notation

A. Simplify the given interval notation.

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

4) $[-6, 4) \cup [-4, \infty)$

Simpliest Form:

Simpliest Form:

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

5) $(-\infty, 4) \cup [7, 11] \cup [6, \infty)$

Simpliest Form:

Simpliest Form:

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

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

Simpliest Form:

Simpliest Form:

Polynomial Inequality

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

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

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

Solution Set:

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

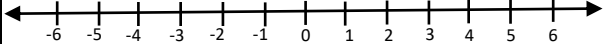
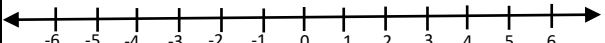
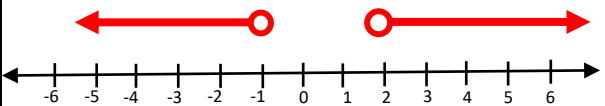
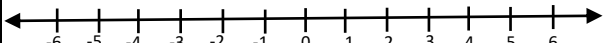
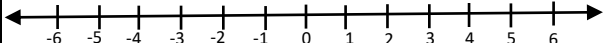
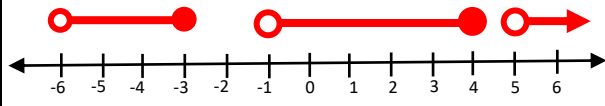
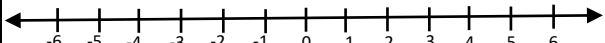
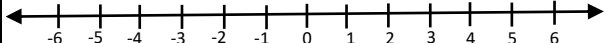
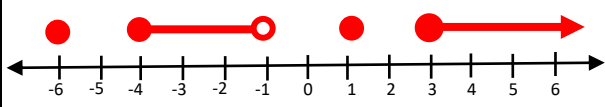
$$7) \ (x-1)(x+1)(x+2)(x+3) \leq 0$$

Solution Set:

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

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