Name _____ Student No._____ G___/____ Date: _____Score: _____
Nickname: _____ Worksheet No.: _____

# Simplifying Interval Notation

## A. Simplify the given interval notation.

1) $(-\infty, 6] \cup (1, 10]$

Simpliest Form:

2) $[-1, 4) \cup [1, \infty)$

Simpliest Form:

3) $(-\infty, 4) \cup [-6, -1]$

Simpliest Form:

4) $(-\infty, 6] \cup (0, 11]$

Simpliest Form:

5) $(-\infty, 4) \cup [1, 9] \cup [5, \infty)$

Simpliest Form:

6) $(-\infty, 2) \cup [6, 12] \cup [5, \infty)$

Simpliest Form:

# Polynomial Inequality

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

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

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

Solution Set:

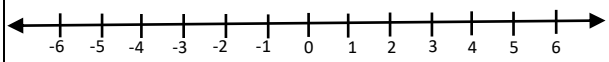
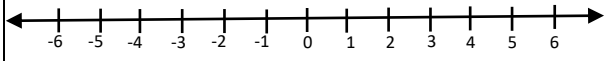
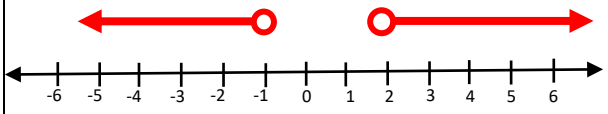
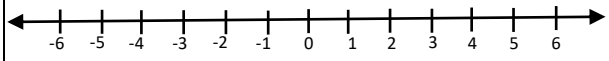
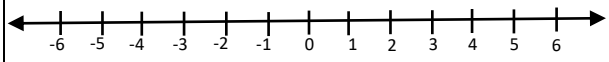
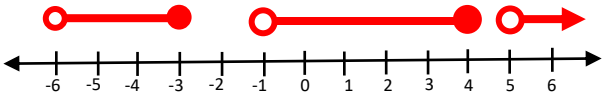
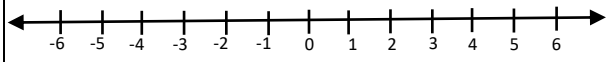
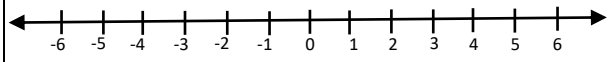
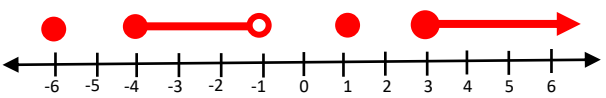
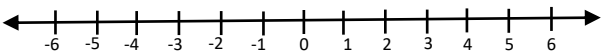
7) $(x-1)^3 \geq 0$

Solution Set:

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

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