

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

Simplifying Interval Notation

A. Simplify the given interval notation.

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

4) $(-\infty, 2) \cup (5, \infty)$

Simplified Form: $(-\infty, \infty)$

Simplified Form: $(-\infty, 2) \cup (5, \infty)$

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

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

Simplified Form: $(-\infty, 3]$

Simplified Form: $(-\infty, 4] \cup [5, \infty)$

3) $[-3, 6] \cup [-6, 1]$

6) $(-\infty, 3] \cup [5, 12) \cup (7, \infty)$

Simplified Form: $[-6, 6]$

Simplified Form: $(-\infty, 3] \cup [5, \infty)$

Polynomial Inequality

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

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

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

Solution Set: $(-\infty, -2] \cup [-1, 1]$

Solution Set: $(-1, \infty)$

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

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

$$\text{Solution Set: } (-\infty, -2) \cup (-2, 1) \cup (1, 2)$$

$$\text{Solution Set: } (-3, -1) \cup (-1, 1)$$

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

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

$$\text{Solution Set: } (-2, -1) \cup (-1, 1) \cup (2, \infty)$$

$$\text{Solution Set: } (-\infty, -3] \cup \{-1, 1\}$$

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

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

$$\text{Solution Set: } \{-2, 1\}$$

$$\text{Solution Set: } \{-3, -1\} \cup [1, \infty)$$