

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

Simplifying Interval Notation

A. Simplify the given interval notation.

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

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

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

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

2) $(-\infty, 2) \cup [-8, 5]$

5) $(-\infty, 3] \cup [4, 11) \cup (5, \infty)$

Simpliest Form: $(-\infty, 5]$

Simpliest Form: $(-\infty, 3] \cup [4, \infty)$

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

6) $(-\infty, 3] \cup [2, 10) \cup (7, \infty)$

Simpliest Form: $[-1, \infty)$

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

Polynomial Inequality

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

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

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

Solution Set: $(-\infty, -3) \cup (-3, -2) \cup (-2, \infty)$

Solution Set: $(-3, -2)$

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

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

$$6) (x-1)^3 < 0$$

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

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

$$7) (x+1)(x+2)(x+3) > 0$$

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

Solution Set: $(-3, -2) \cup (-1, \infty)$

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

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

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

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