Key Characteristics of Graphs (Notes 02) – Domain & Range

- <u>Domain</u> – The set of inputs (x-values) in a relation

  o Associated Characteristics
    - inputs
    - independent quantities (variables)
    - x-values
    - read from Left to Right (smallest # to greatest #) across horizontal (x-axis)

  o Inequality Notation – written as x is greater or less than # value(s).
    - Ex: $x \geq 7$ or $7 \leq x < \infty$
    - Ex: $-\infty < x < \infty$

  o Domain Intervals – The intervals of increase and decrease are associated ONLY with the domain.

    - Interval of Increase – A graph (or section(s) of a graph) that rises from Left to Right.
      - As x-values increase, y-values increase.
      - As y-values increase, x-values decrease.

    - Interval of Decrease – A graph (or section(s) of a graph) that lowers from Left to Right.
      - As x-values increase, y-values decrease.
      - As y-values decrease, x-values increase.

- <u>Range</u> - The set of outputs (y-values) in a relation.

  o Associated Characteristics
    - outputs
    - dependent quantities (variables)
    - y-values
    - read from bottom to top (smallest # to greatest #) across vertical (y-axis)

  o Inequality Notation – written as y is greater or less than # value(s).
    - Ex: $y \leq 10$ or $-\infty < y \leq 10$
    - Ex: $-\infty < y < \infty$

Practice – In inequality notation, write the domain, interval(s) of increase, interval(s) of decrease, and range for the following graphs.
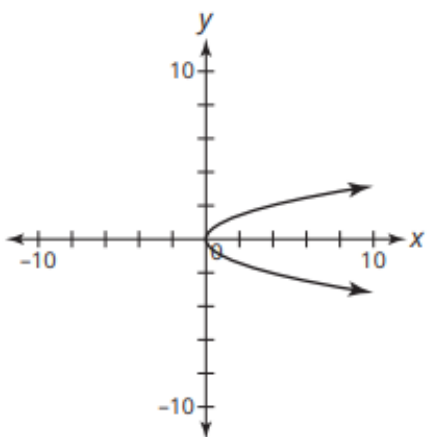
1.
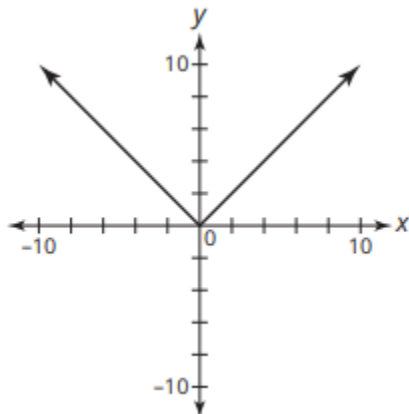
Domain: _____

Interval(s) of Increase: _____

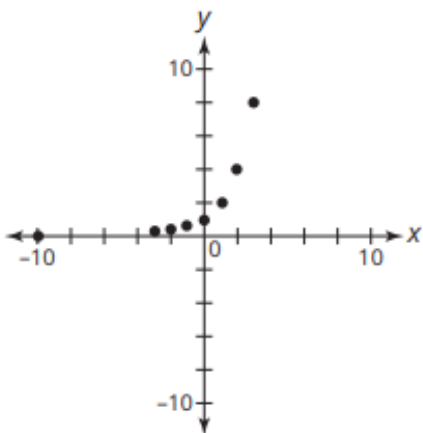Interval(s) of Decrease: _____

Range: _____

2.

Domain: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

Range: _____

3.

Domain: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

Range: _____