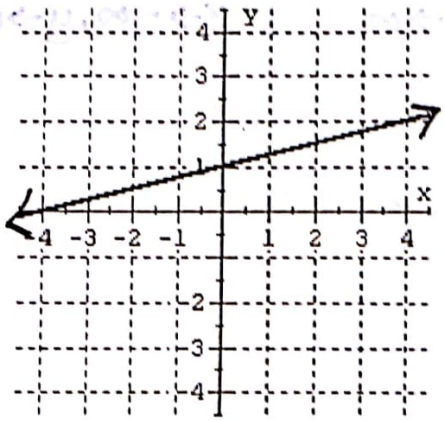
Name Key

Finding Domain, Range, End Behavior, Intervals of Increasing/Decreasing of Graphs

Directions: For each graph of a function, state the domain, range, the relative minimums and maximums, and the intervals on which the function is increasing/decreasing/constant. Also state the coordinates of the zeros of the function.

1.



Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

End Behavior:

$\lim_{x \to \infty} f(x) = \infty$ $\quad$ $\lim_{x \to -\infty} f(x) = -\infty$

$x \to \infty, y \to \infty$ $\quad$ $x \to -\infty, y \to -\infty$

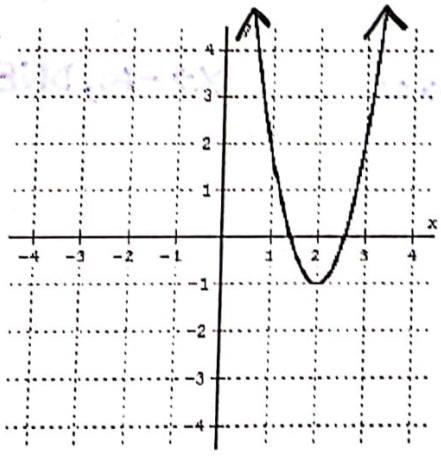
Intervals – Increasing: $(-\infty, \infty)$

Decreasing: none

Constant: none

Zeros: $(-4, 0)$

2.



Domain: $(-\infty, \infty)$

Range: $[-1, \infty)$

End Behavior:

$\lim_{x \to \infty} f(x) = \infty$ $\quad$ $\lim_{x \to -\infty} f(x) = \infty$

$x \to \infty, y \to \infty$ $\quad$ $x \to -\infty, y \to \infty$

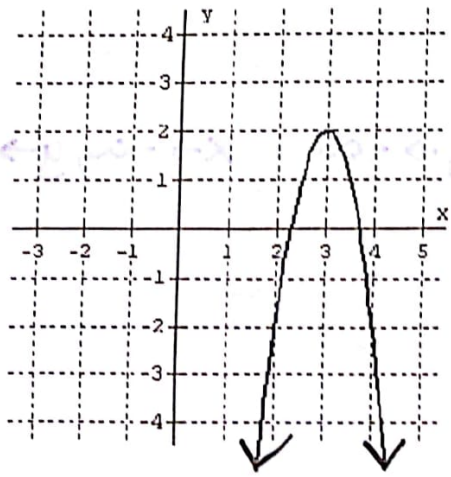
Intervals – Increasing: $(2, \infty)$

Decreasing: $(-\infty, 2)$

Constant: none

Zeros: $(1.5, 0), (2.5, 0)$

3.



Domain: $(-\infty, \infty)$

Range: $(-\infty, 2]$

End Behavior:

$\lim_{x \to \infty} f(x) = -\infty$ $\quad$ $\lim_{x \to -\infty} f(x) = -\infty$

$x \to \infty, y \to -\infty$ $\quad$ $x \to -\infty, y \to -\infty$

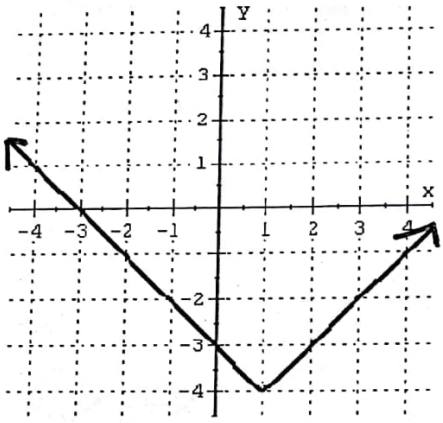
Intervals – Increasing: $(-\infty, 3)$

Decreasing: $(3, \infty)$

Constant: none

Zeros: $(2.2, 0), (3.8, 0)$

4.



Domain: $(-\infty, \infty)$

Range: $[-4, \infty)$

End Behavior:

$\lim_{x \to \infty} f(x) = \infty$ $\quad x \to \infty, y \to \infty$

$\lim_{x \to -\infty} f(x) = \infty$ $\quad x \to -\infty, y \to \infty$

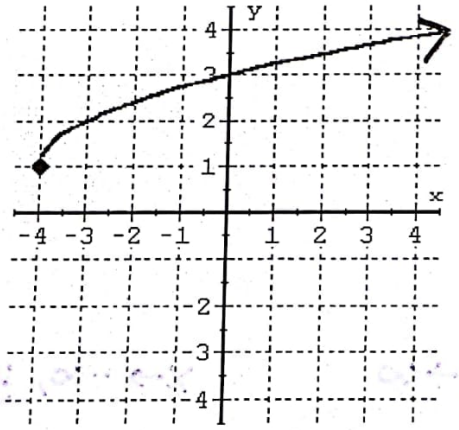
Intervals – Increasing: $(1, \infty)$

Decreasing: $(-\infty, 1)$

Constant: none

Zeros: $(-3, 0), (5, 0)$

5.



Domain: $[-4, \infty)$

Range: $[1, \infty)$

End Behavior:

$\lim_{x \to \infty} f(x) = \infty$ $\quad x \to \infty, y \to \infty$

$\lim_{x \to -\infty} f(x)$ DNE $\quad x \to -\infty$, DNE

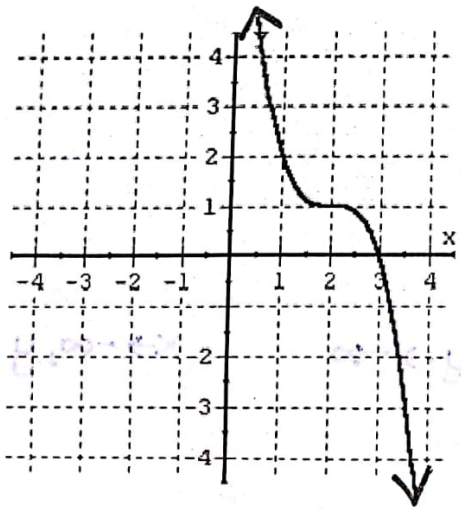
Intervals – Increasing: $(-4, \infty)$

Decreasing: none

Constant: none

Zeros: none

6.



Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

End Behavior:

$\lim_{x \to \infty} f(x) = -\infty$ $\quad x \to \infty, y \to -\infty$

$\lim_{x \to -\infty} f(x) = \infty$ $\quad x \to -\infty, y \to \infty$

Intervals – Increasing: none

Decreasing: $(-\infty, 2) \cup (2, \infty)$

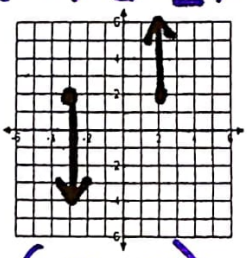
Constant: none

Zeros: $(3, 0)$

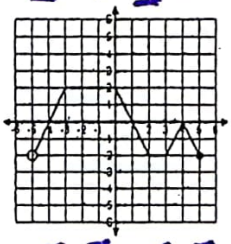
Domain and Range Worksheet #1 Name: KEY

State the domain and range interval notation

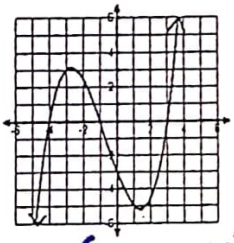
1) Domain $[-3] \cup [2]$
Range $(-\infty, 2] \cup [2, \infty)$



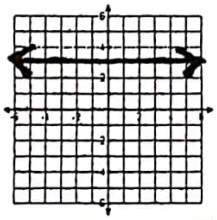
2) Domain $(-5, 5]$
Range $[-2, 2]$



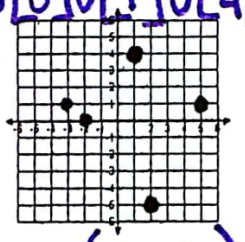
3) Domain $(-\infty, \infty)$
Range $(-\infty, \infty)$



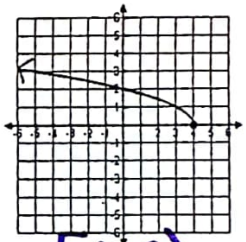
4) Domain $(-\infty, \infty)$
Range $[3]$



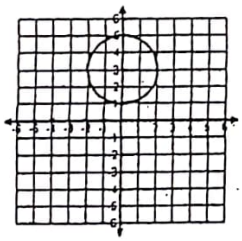
5) Domain $[-3] \cup [-2] \cup [1] \cup [2] \cup [5]$
Range $[-5] \cup [0] \cup [1] \cup [4]$



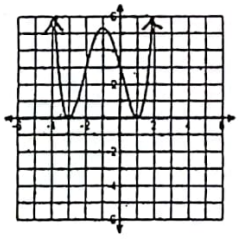
6) Domain $(-\infty, 4]$
Range $[0, \infty)$



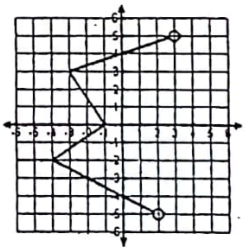
7) Domain $[-2, 2]$
Range $[1, 5]$



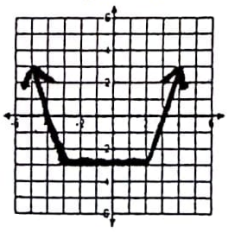
8) Domain $(-\infty, \infty)$
Range $[0, \infty)$



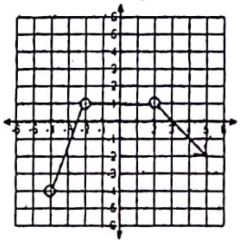
9) Domain $[-4, 3)$
Range $(-5, 5)$



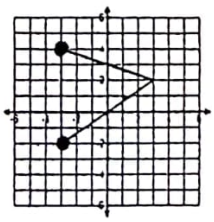
10) Domain $(-\infty, \infty)$
Range $[-3, \infty)$



11) Domain $(-3, \infty)$
Range $(-4, 1]$



12) Domain $[-3, 3]$
Range $[-2, 4]$

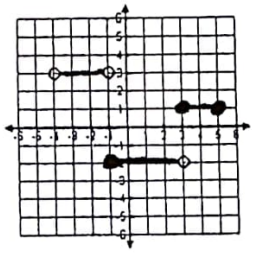


Domain and Range Worksheet #2 Name: _____

State the domain and range in interval notation

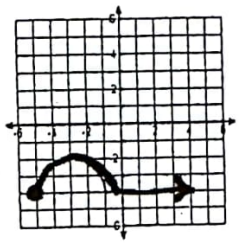
1) Domain $(-4,-1) \cup [-1,3) \cup [3,5]$

Range $[-2] \cup [1] \cup [3]$



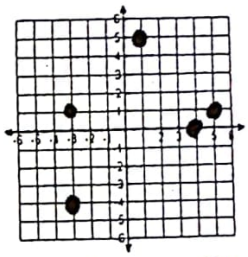
2) Domain $[-5, \infty)$

Range $[-4,-2]$



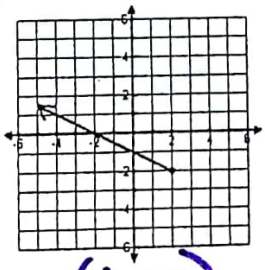
3) Domain $[-3] \cup [-1] \cup [4] \cup [5]$

Range $[-4] \cup [0] \cup [1] \cup [5]$



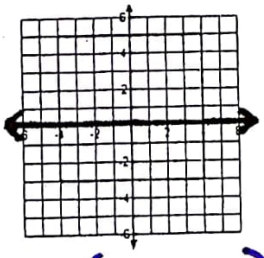
4) Domain $(-\infty, 2]$

Range $[-2, \infty)$



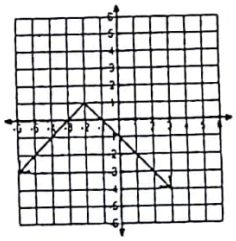
5) Domain $(-\infty, \infty)$

Range $[0]$



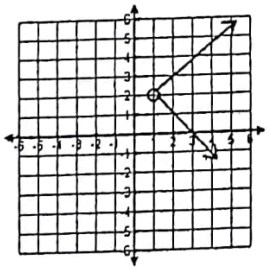
6) Domain $(-\infty, \infty)$

Range $(-\infty, 1]$



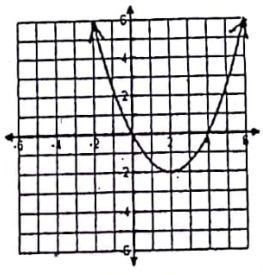
7) Domain $(1, \infty)$

Range $(-\infty, 2) \cup (2, \infty)$



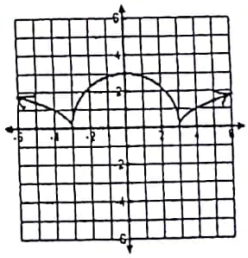
8) Domain $(-\infty, \infty)$

Range $[-2, \infty)$



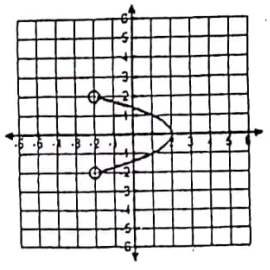
9) Domain $(-\infty, \infty)$

Range $[0, \infty)$



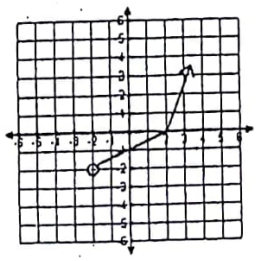
10) Domain $(-2, 2]$

Range $(-2, 2)$



11) Domain $(-2, \infty)$

Range $(-1, \infty)$



12) Domain $(-5, 3)$

Range $[-3, 5]$