

Domain and Range Notes

plug in & solve

WARM UP -

Evaluate each function.

1) $g(n) = -4n + 5$; Find $g(6)$
 $g(6) = -4(6) + 5$
 $= -19$

2) $h(a) = a^3 + 5$; Find $h(-2)$
 $h(-2) = -3$

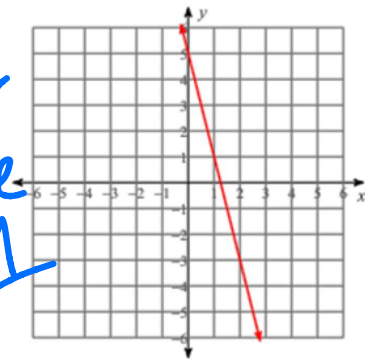
3) $h(n) = |n + 1|$; Find $h(-9)$
 $h(-9) = 8$

4) $k(t) = |-t - 1|$; Find $k(-7)$
 $k(-7) = 6$

Given the function and graph, state the name of the parent function?

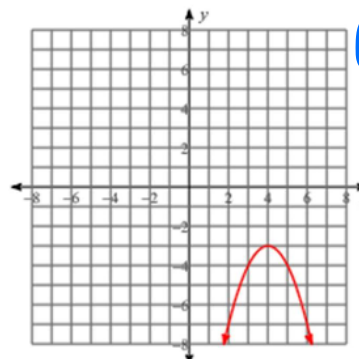
5) $4x + y = 5$

Linear
Degree 1



6) $y = -x^2 + 8x - 19$

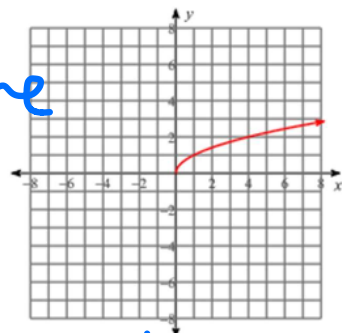
quadratic
degree 2



7) $y = \sqrt{x}$

square root

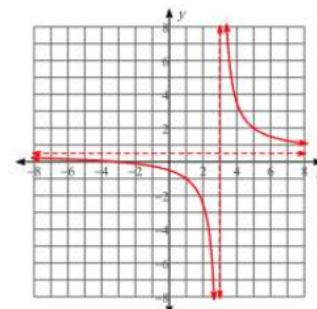
degree $\frac{1}{2}$



8) $f(x) = \frac{x+3}{2x-6}$

$\frac{P(x)}{Q(x)}$

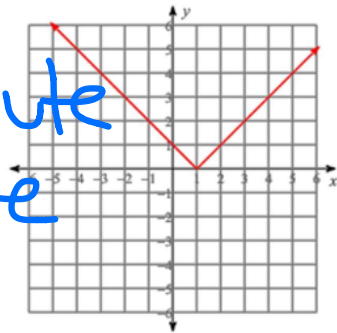
Rational function



Domain and Range Notes

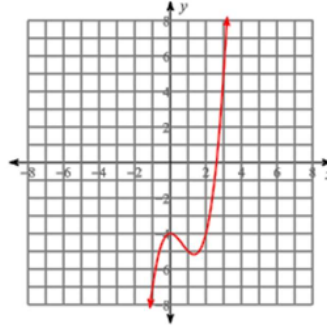
9) $y = |x - 1|$

Absolute Value



10) $f(x) = x^3 - 2x^2 - 4$

Cubic Degree 3



-----End Warmup-----

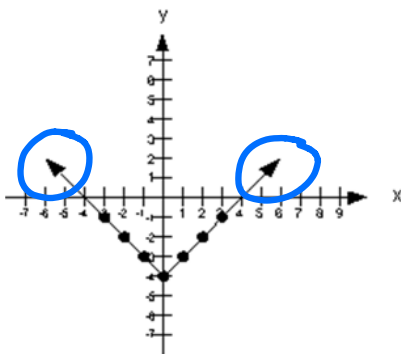
Identifying Domain and Range from a graph:

- Domain is the set of input (x) values on the x-axis (horizontal axis) that correspond to a point on the graph.
- Range is the set of output (y) values on the y-axis (vertical axis) that correspond to a point on the graph.

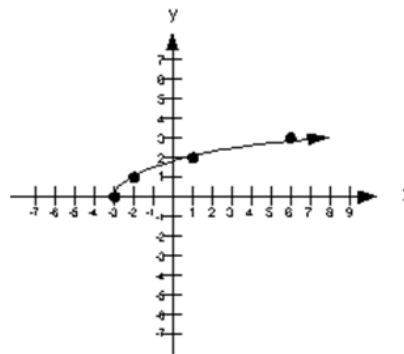
interval notation
()
or
[]
or
combo.

1. $y = h(x) = |x| - 4$

Abs. Value



2. $y = g(x) = \sqrt{x + 3}$



Square Root

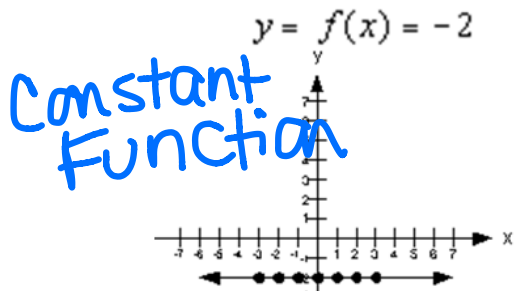
$D: (-\infty, \infty)$ or \mathbb{R}
 $R: [-4, \infty)$

$D: [-3, \infty)$
 $R: [0, \infty)$

parenthesis : not including a value
hole or $-\infty$ or ∞

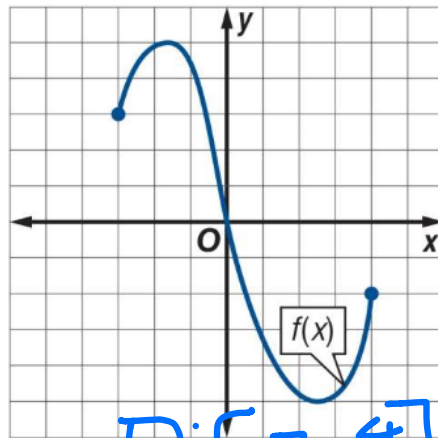
Domain and Range Notes

3.



D: $(-\infty, \infty)$
 R: $[-2]$ or $\{-2\}$

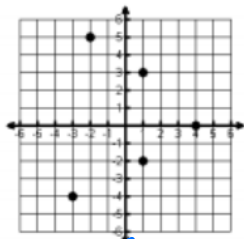
4.



D: $[3, 4]$
 R: $[-5, 5]$

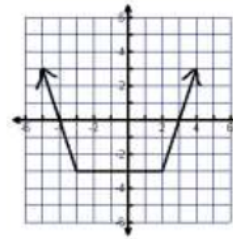
State if the graph is a function. Identify the domain and range – interval notation.

1.



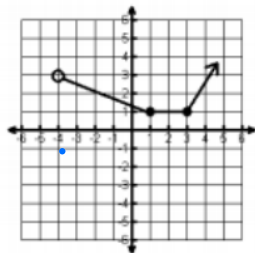
D: $[-3] \cup [-2] \cup [1] \cup [4]$
 R: $[-4] \cup [-2] \cup [0] \cup [3] \cup [5]$

3.



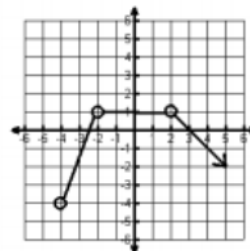
D: $(-\infty, \infty)$
 R: $[-3, \infty)$

2.



D: $(-4, \infty)$
 R: $[1, \infty)$

4.



D: $(-4, -2) \cup (-2, 2) \cup (2, \infty)$
 R: $(-\infty, 1]$

Interval Notation (challenging)

 $()$ or $[]$

Write the domain in interval notation.

1. Domain:
- $x \geq 5$
- and
- $x \neq 12$

$$[5, 12) \cup (12, \infty)$$

2. Domain:
- $x \geq 2$
- ,
- $x < 15$
- and
- $x \neq 7$

$$[2, 7) \cup (7, 15)$$

3. Domain:
- $x \geq 4$
- ,
- $x \neq 5$

4. Domain:
- $x \neq 3$

$$(-\infty, 3) \cup (3, \infty)$$

5. Domain:
- $x < 3$
- and
- $x \geq -1$

6. Domain:
- $x < 23$
- and
- $x \neq 11$