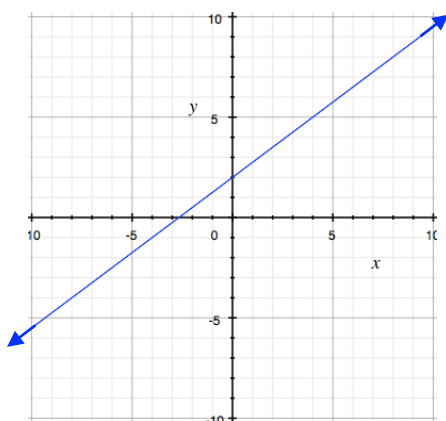


Precalculus Extra Practice

2.1 Review of Functions

Name _____

1.



Domain:

Range:

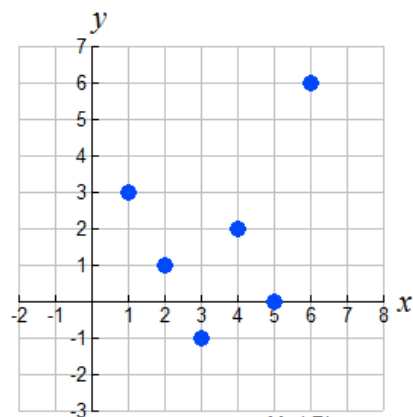
Equation:

Increases on:

Positive on:

Negative on:

2.



Domain:

Range:

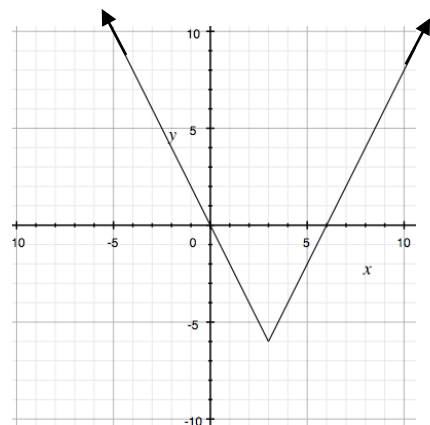
Is this a function?

Discrete or Continuous?

Positive on:

Negative on:

3.



Domain:

Range:

Equation:

$f(-22) =$

Global Minimum at:

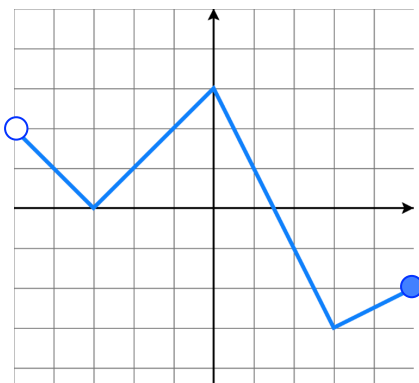
Increases on:

Decreases on:

Positive on:

Negative on:

4.



Domain:

Range:

$f(0) =$

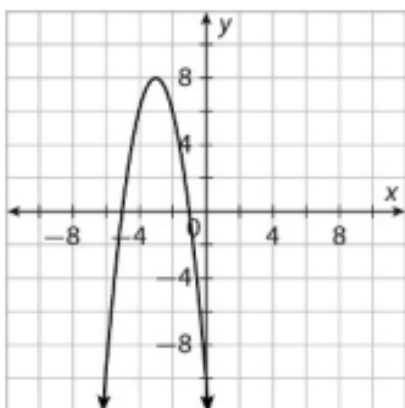
Find x if $f(x) = -3$

Increases on:

Positive on:

Negative on:

5.



Domain:

Range:

Equation:

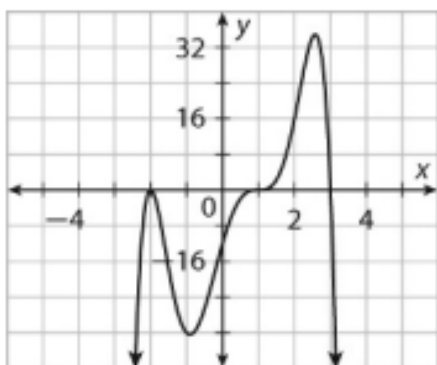
Maximum at:

Absolute or Relative Maximum?

Positive on:

Negative on:

6.



Equation of least degree (assume the constant factor a is 1 or -1):

Domain:

Range:

$f(5) =$

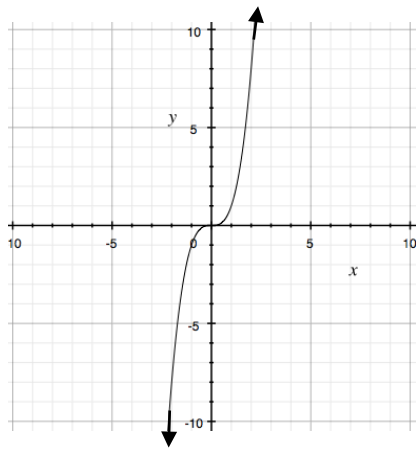
Local Minimum at:

Local Maximum at:

Global Maximum at :

Global Minimum at :

7.



Domain:

Range:

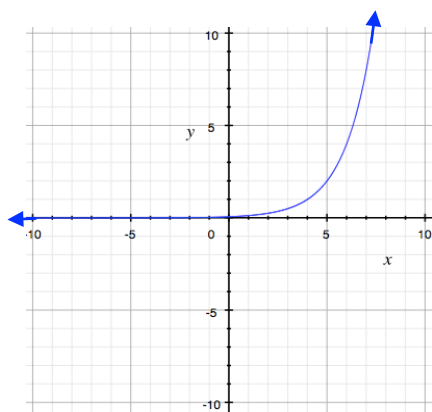
Equation of least degree (assume the constant factor a is 1 or -1):

Increases on:

$f(10) =$

End Behavior:

8.



Domain:

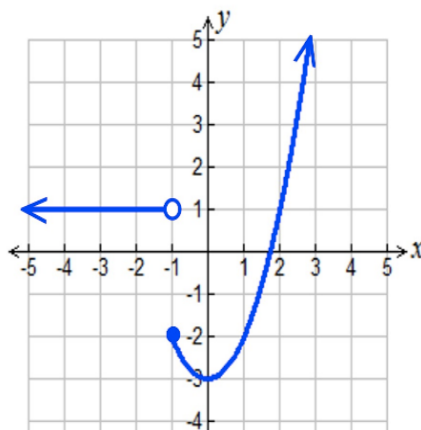
Range:

Type of Function:

End Behavior:

Asymptote:

9.



Domain:

Range:

$f(2) =$

$f(-1) =$

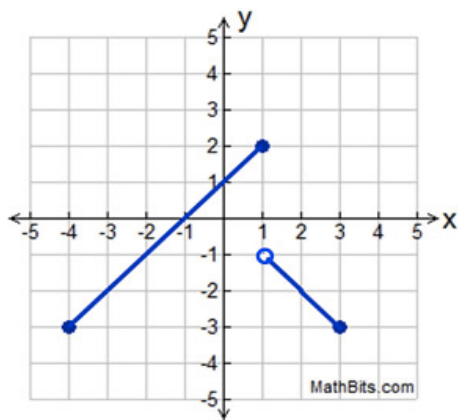
Minimum at:

Relative or Absolute Minimum?

How would you write an equation for the ray?

How would write an equation for the partial parabola?

10.



Domain:

Range:

$f(2) =$

$f(0) =$

Zeros:

How would you write an equation for the left-most line segment?

How would write an equation for the right-most line segment?

11. Consider the graph of a vertical parabola that has a vertex at $(3, 5)$ and goes through the point $(4, 11)$. Answer **True or False** about the graph.

A) It opens upward.

☐ True ☐ False

B) Its range is $[3, \infty)$.

☐ True ☐ False

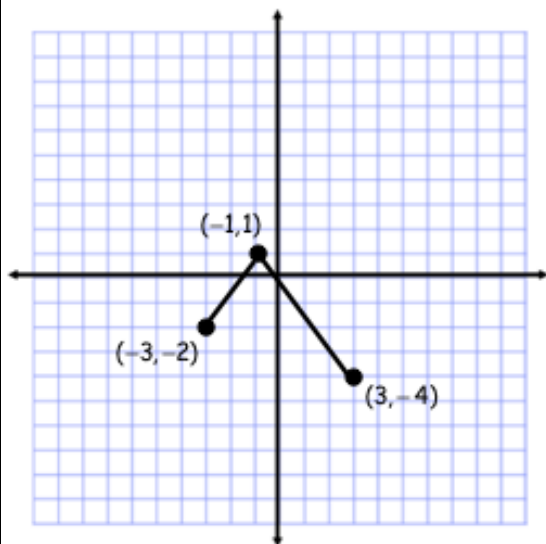
C) The point $(2, -3)$ is on the graph.

☐ True ☐ False

D) The graph has a minimum at its vertex.

☐ True ☐ False

12. The graph below is the function, $f(x)$.



Let $g(x) = -f\left(\frac{1}{2}(x+1)\right) + 4$. Describe the transformations.

Then complete the table below and sketch the graph of $g(x)$ on the same coordinate plane.

$f(x)$		\longrightarrow		$g(x)$	
x	y				

13. If: $f(x) = -x + 3$ $g(x) = -x^2 - 2$ $h(x) = x^3$ $k(x) = x^2 - 4x$

Find: A) $f(-x)$ B) $g(-x)$

C) $h(-x)$ D) $k(-x)$

For A-D: *Did changing the input to $-x$ change the original function?*

E) $f(x + 4)$ F) $g(-3)$

G) $f(g(x))$ H) $\frac{f(x + h) - f(x)}{h}$

14. Write a **quadratic function** in standard form for a parabola that passes through the points $(-4, -6)$, $(0, -2)$, and $(2, 6)$. The standard form of a quadratic function is $f(x) = ax^2 + bx + c$.

15. Write a **quadratic function** for a parabola that has a vertex at $(1, 4)$ and passes through the point $(-3, -28)$. What are the x-intercepts for this parabola?

Graph and analyze the following functions.

16. $g(x) = 2\sqrt{-(x-5)} + 6$

Domain:

Range:

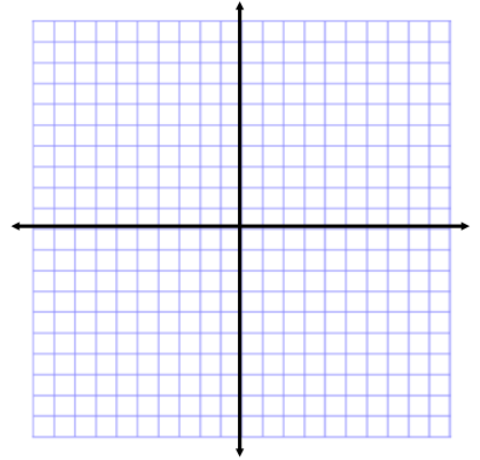
x-int:

y-int:

Positive Interval(s):

Negative Interval(s):

End Behavior:



17. $h(x) = -\left(\frac{1}{2}\right)^{x+3} + 4$

Domain:

Range:

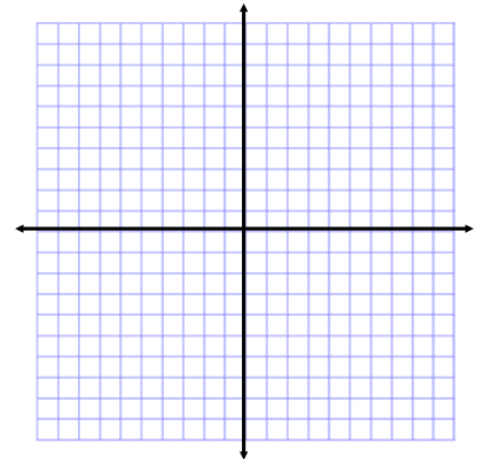
x-int:

y-int:

Positive Interval(s):

Negative Interval(s):

End Behavior:



18. $p(x) = 3x^2 + 6x - 5$

Domain:

Range:

x-int:

y-int:

Increasing Interval(s):

Decreasing Interval(s):

End Behavior:

