

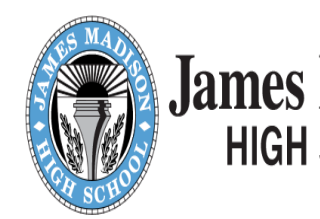


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Characteristics of a graph

(Lots of Vocabulary)

**Domain, Range, Max, Min, Zero,
Y-Intercept, Interval of Increase,
and Interval of Decrease**



Finding Domain & Range Given:

- Discrete graphs – you just **LIST** the domain and range (don't repeat and list in order from least to greatest)
- Continuous graphs – use **interval notation** (*least, greatest*)



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Find the Domain and Range

x	y
-4	1
-6	2
-8	3

Domain : $\{-8, -6, -4\}$

Range : $\{1, 2, 3\}$



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Find the Domain and Range

x	y
12	-4
15	-6
16	-4

Domain : {12, 15, 16}

Range : {-6, -4}



Set Notation Uses:

$()$ Is used when there is a *open* dot or the number is **NOT** included on the graph.

$[]$ Is used when there is a *closed* dot or when the number is included on the graph.

\cup Is used when one number is excluded.

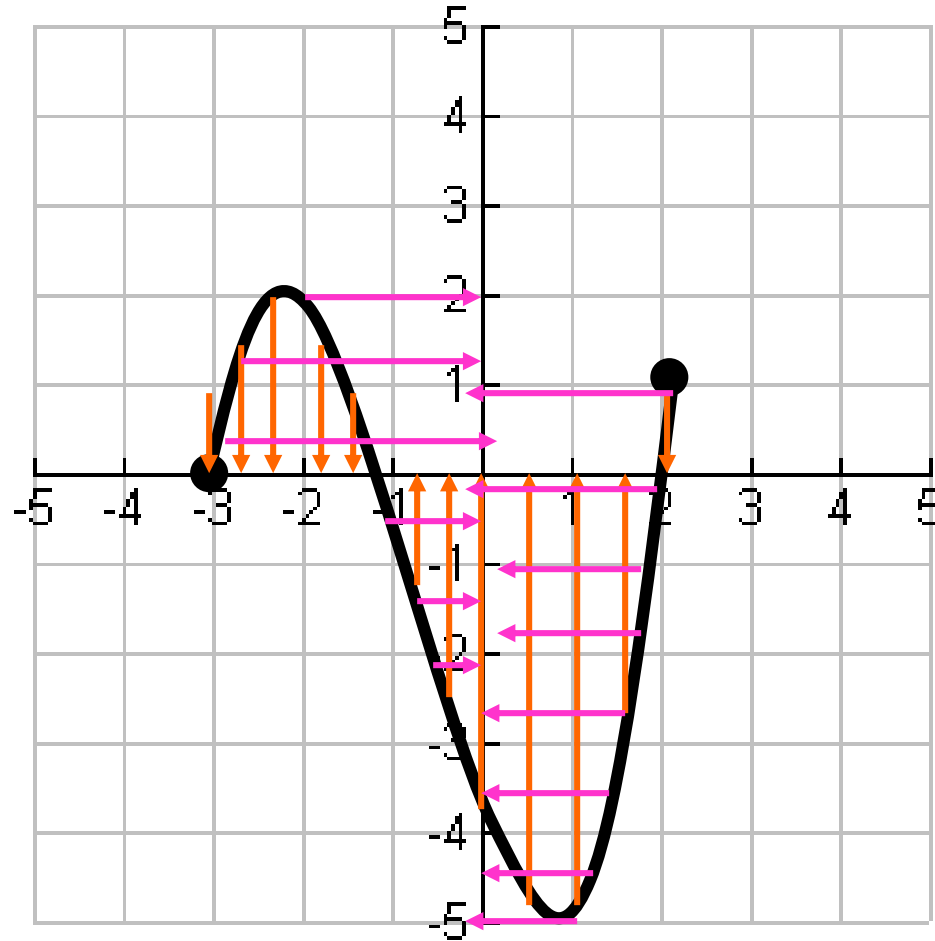


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Domain and Range: Graph

$$D : [-3, 2]$$

$$R : [-5, 2]$$



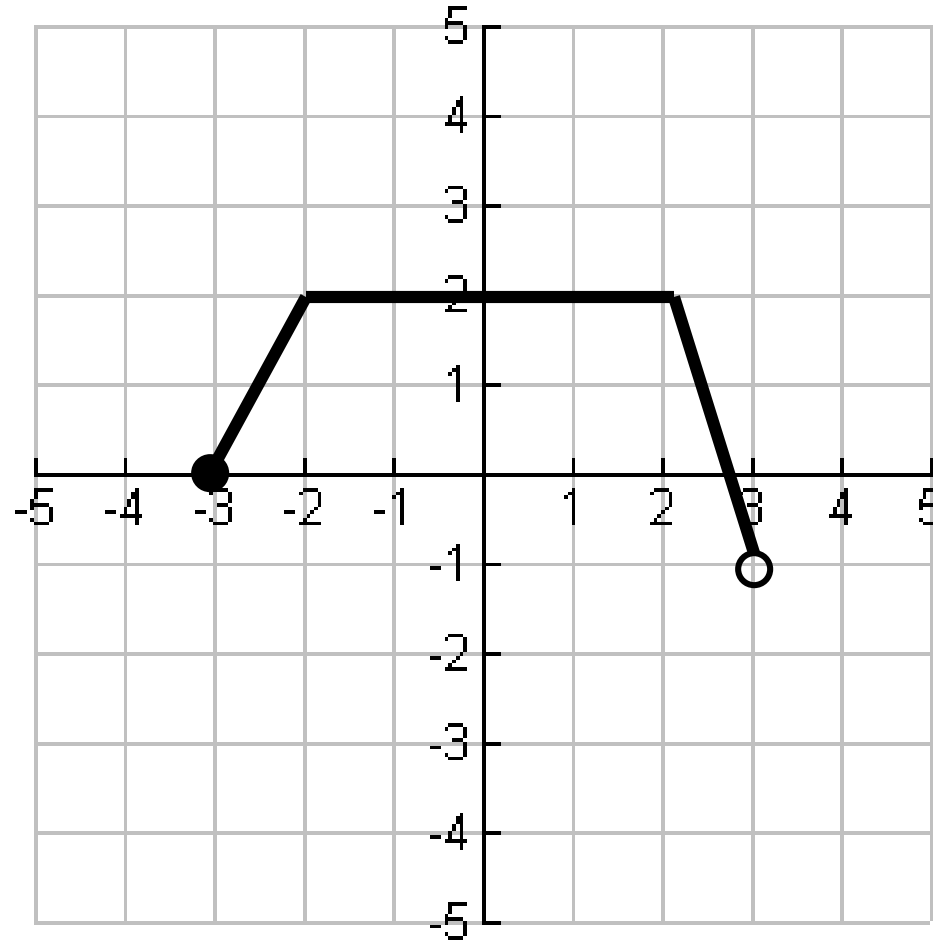


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Domain and Range: Graph

$$D : [-3, 3)$$

$$R : (-1, 2]$$



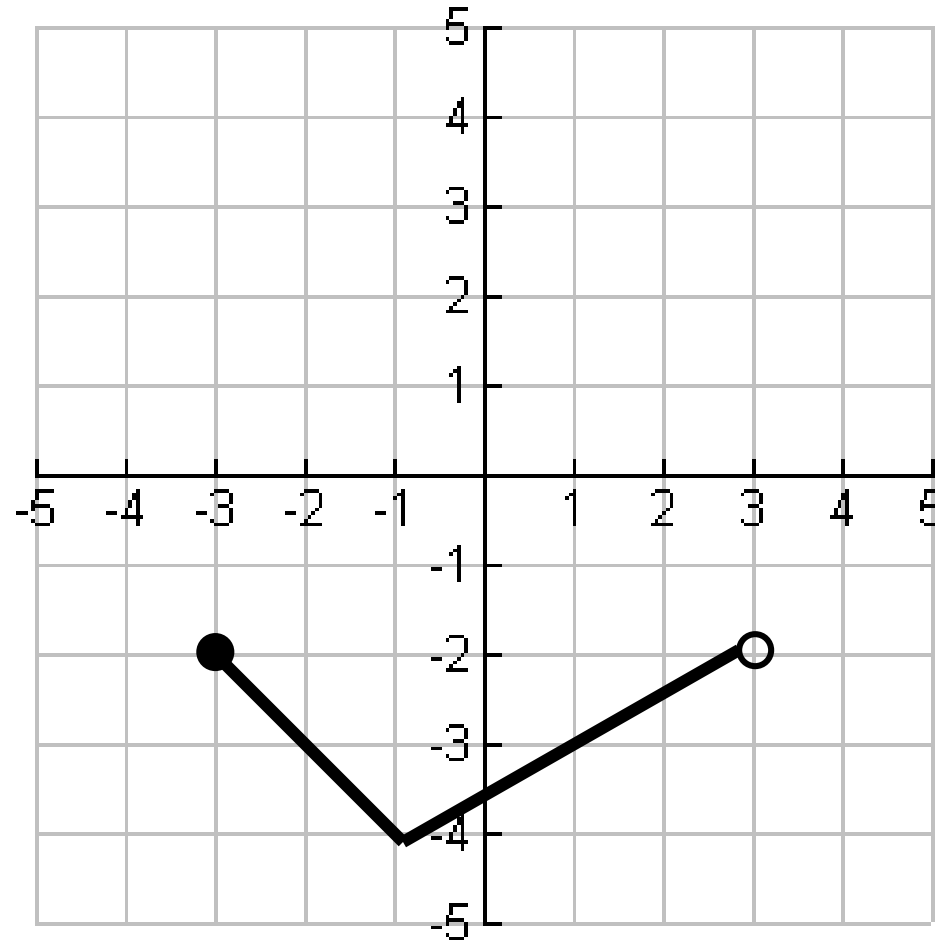


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Domain and Range: Graph

$$D : [-3, 3)$$

$$R : [-4, -2]$$



Special case: When there is an open circle and closed circle on the same number – go with the closed circle.

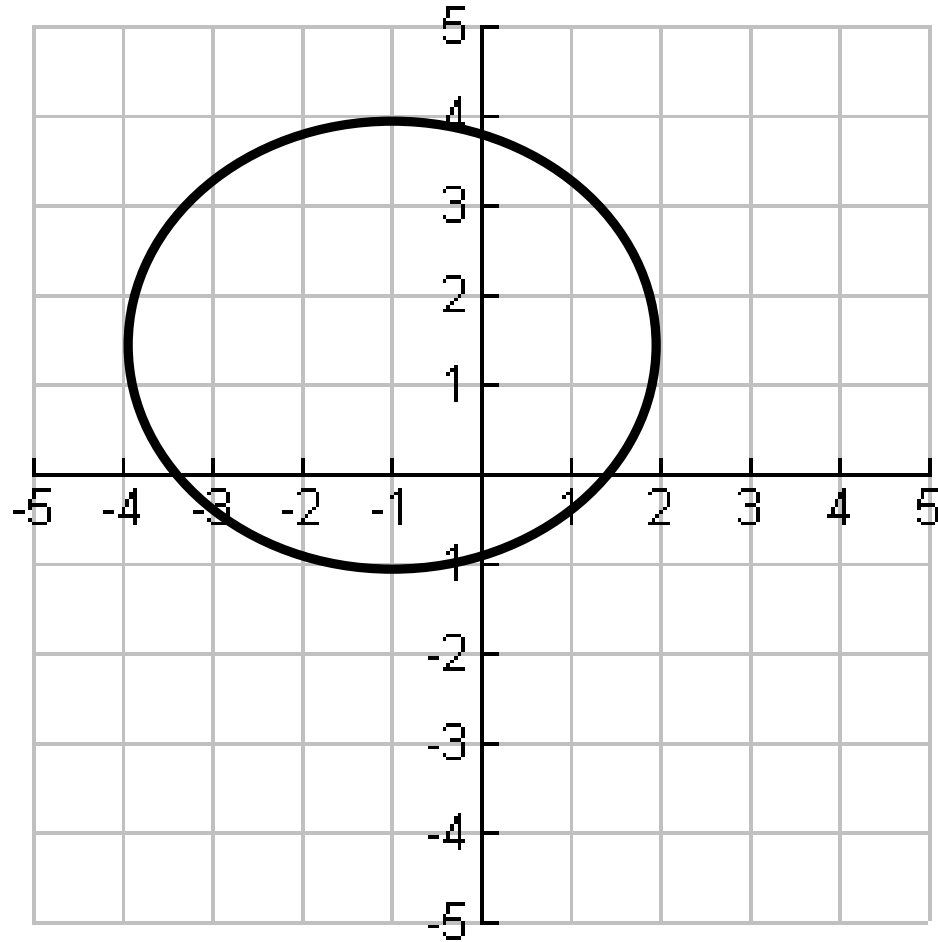


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Domain and Range: Graph

$$D : [-4, 2]$$

$$R : [-1, 4]$$



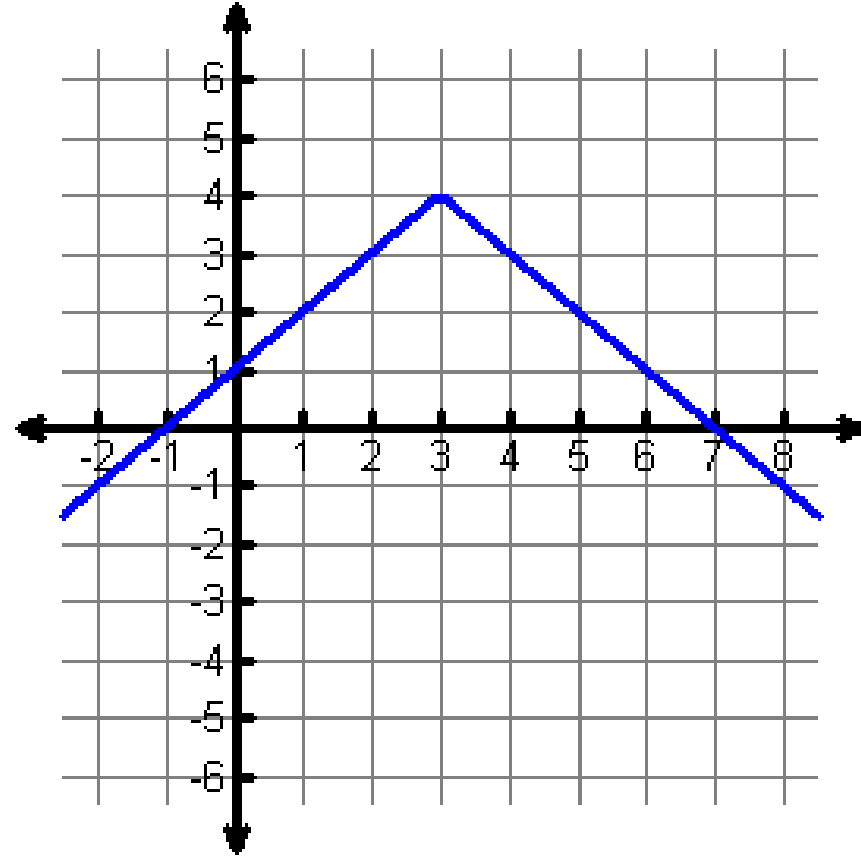


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Domain and Range: Graph

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

$$R : (-\infty, 4]$$



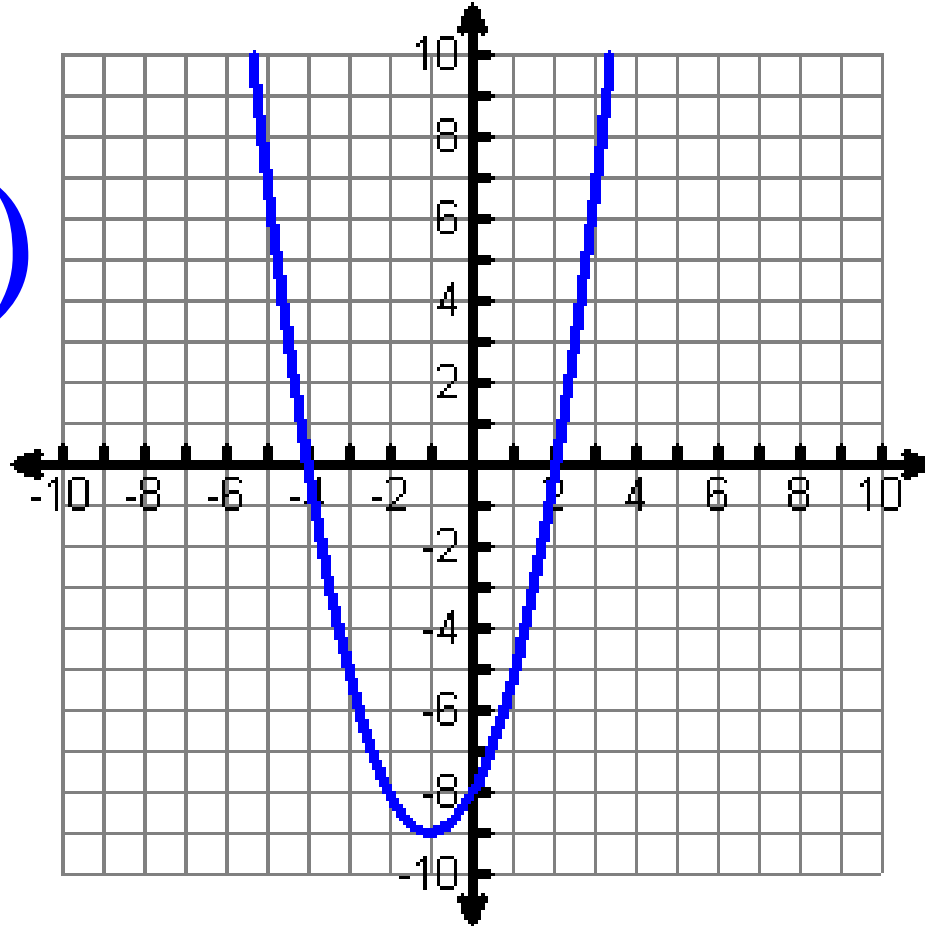


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Domain and Range: Graph

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

$$R : [-9, \infty)$$





Maximum or Minimum Point

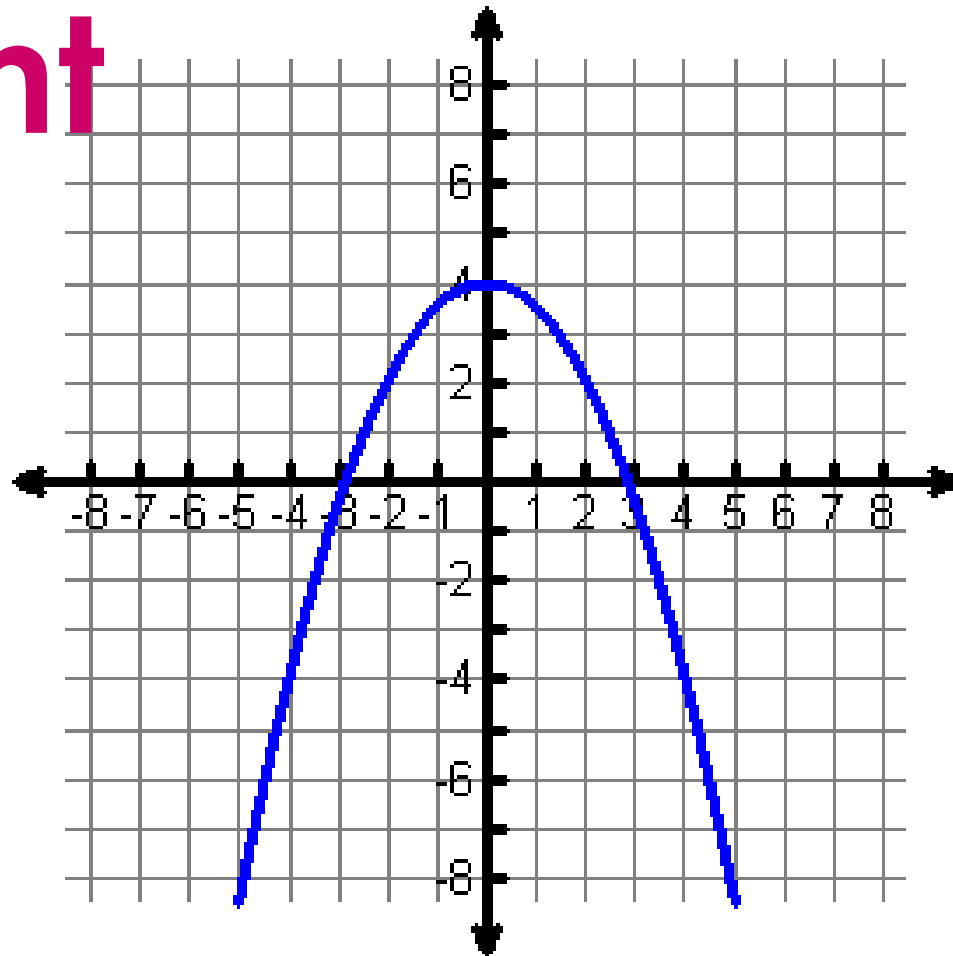
- Max. Point – is the HIGHEST on the graph
- Min. Point – is the LOWEST on the graph

(x, y)

Maximum or Minimum Value?
Where?

Max. Point

(0, 4)

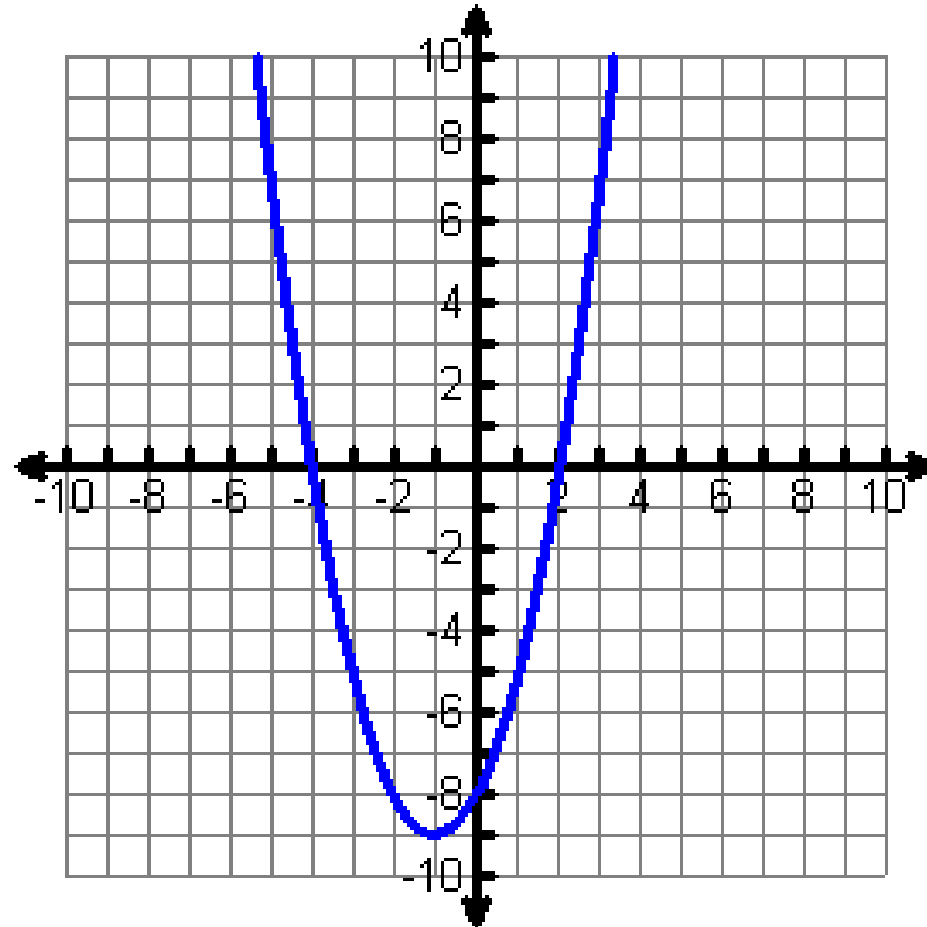




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Maximum or Minimum Value?
Where?

Min. Point
 $(-1, -9)$





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ZEROS

are the same thing as the
X-INTERCEPTS.

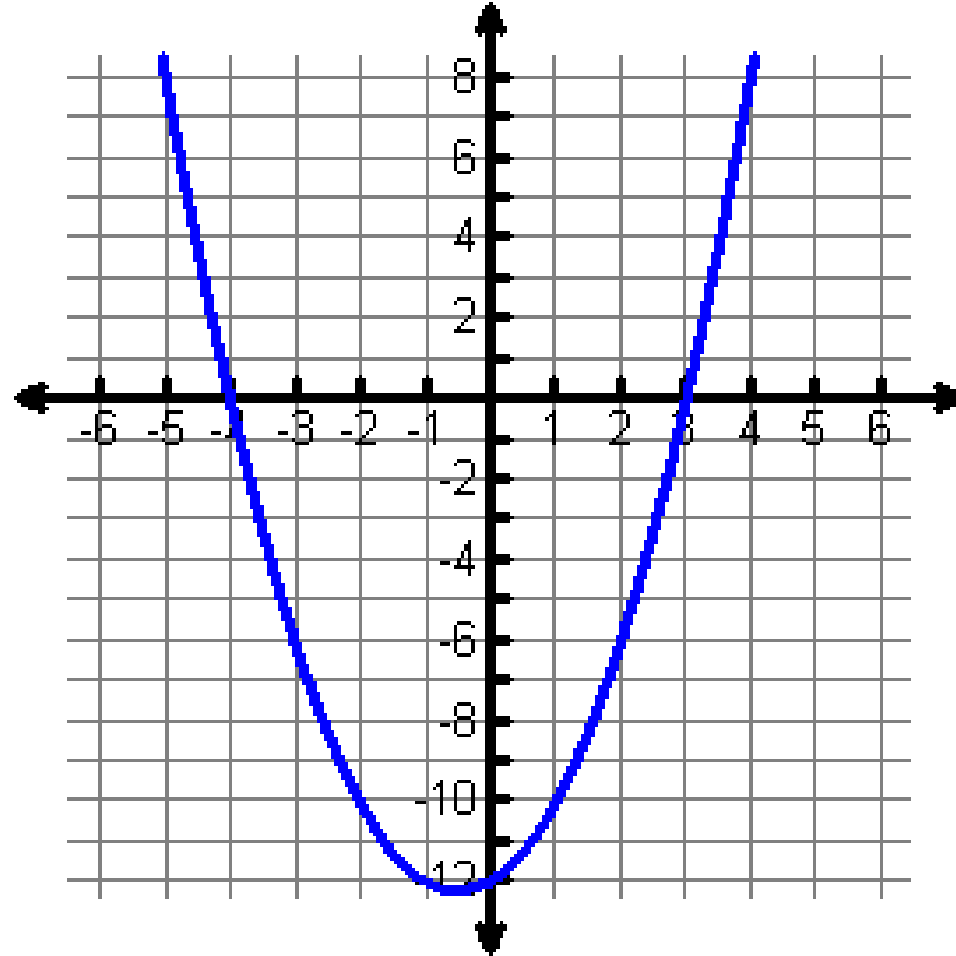
(x, y)



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Name the zeros.

$(-4, 0)$
and
 $(3, 0)$

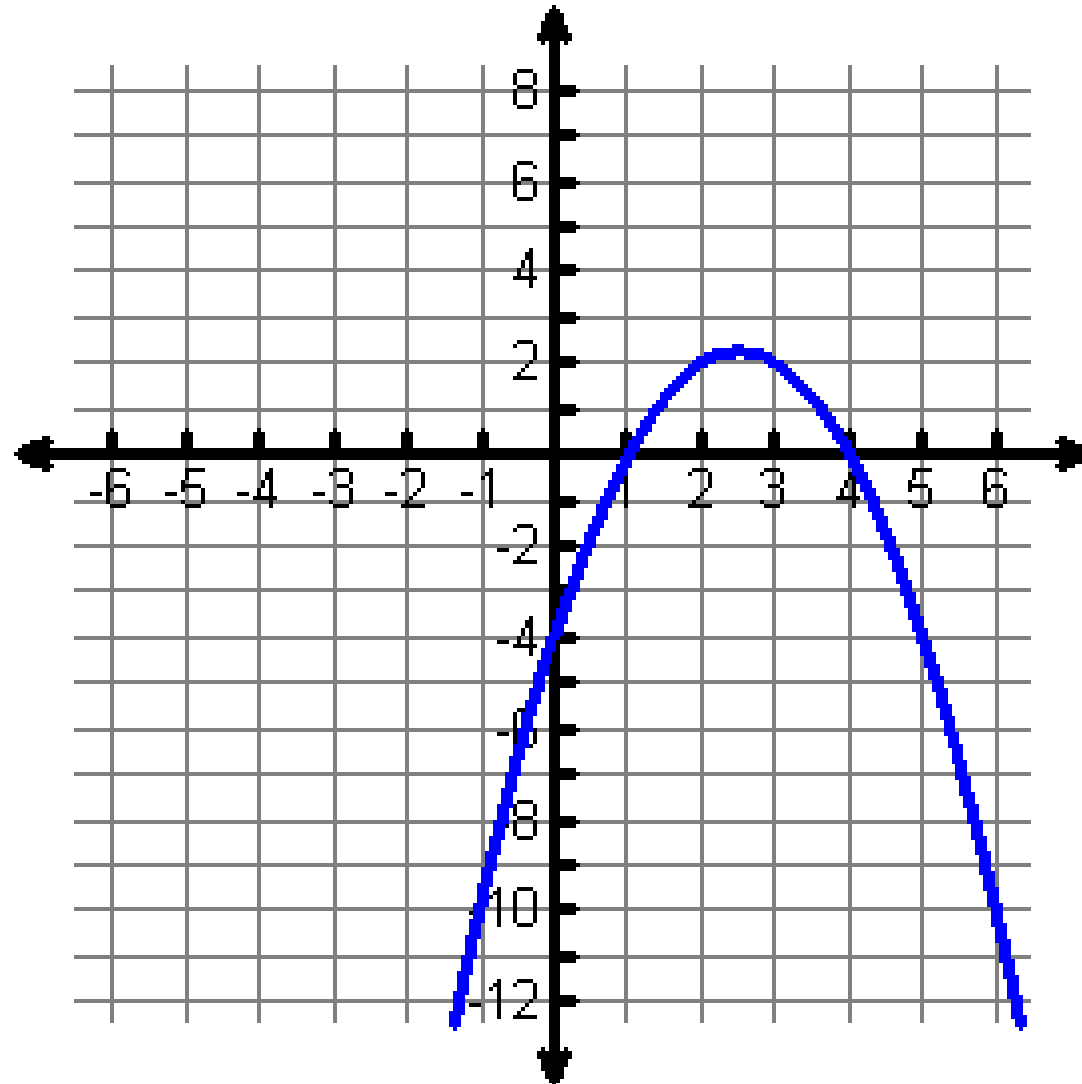




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Name the Y-INTERCEPT

$(0, -4)$





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Interval of Increase, Interval of Decrease, & Constant Graphs

To find where the graph is increasing and decreasing, trace the graph with your finger from left to right.



Specify the x-values!



Increasing, Decreasing, & Constant: Graphs

★ If your finger is going **up**, the graph is increasing.

★ If your finger is going **down**, the graph is decreasing.

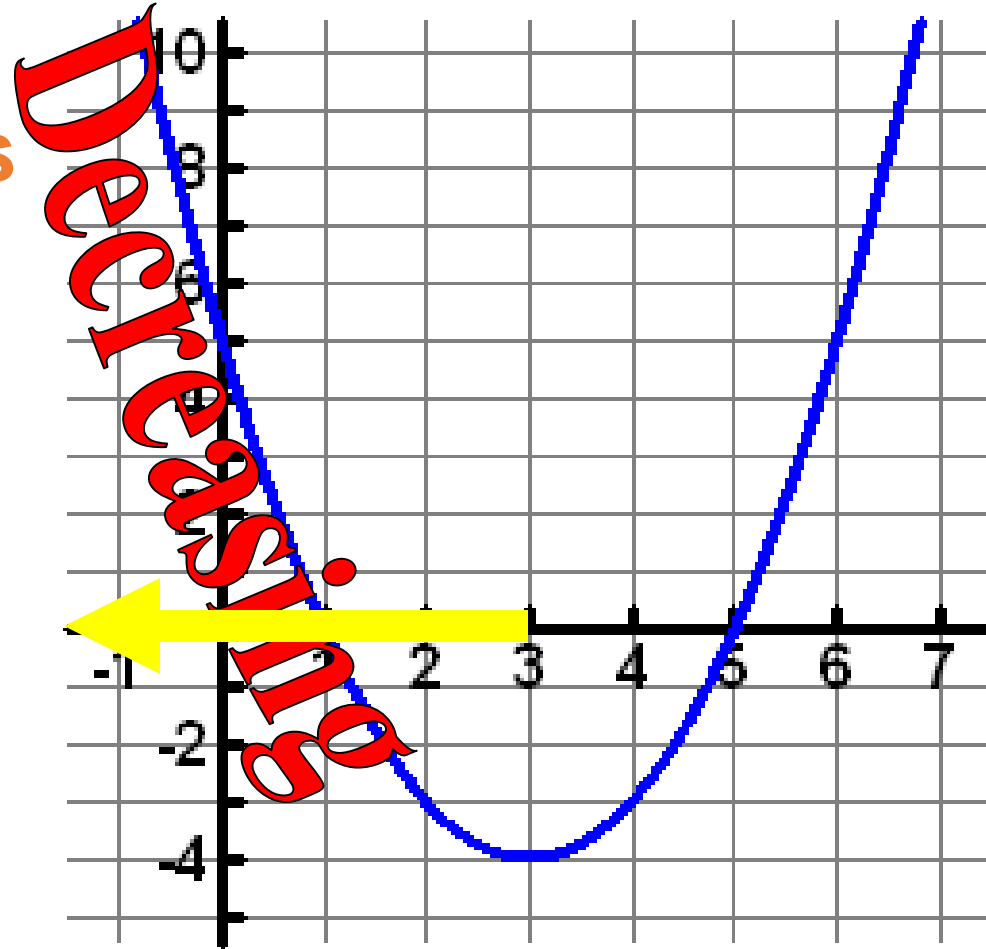
★ If your finger goes **neither** up or down...then the graph is CONSTANT.



Find the interval of decrease.

The x-values
where the graph is
going down.

$(-\infty, 3)$

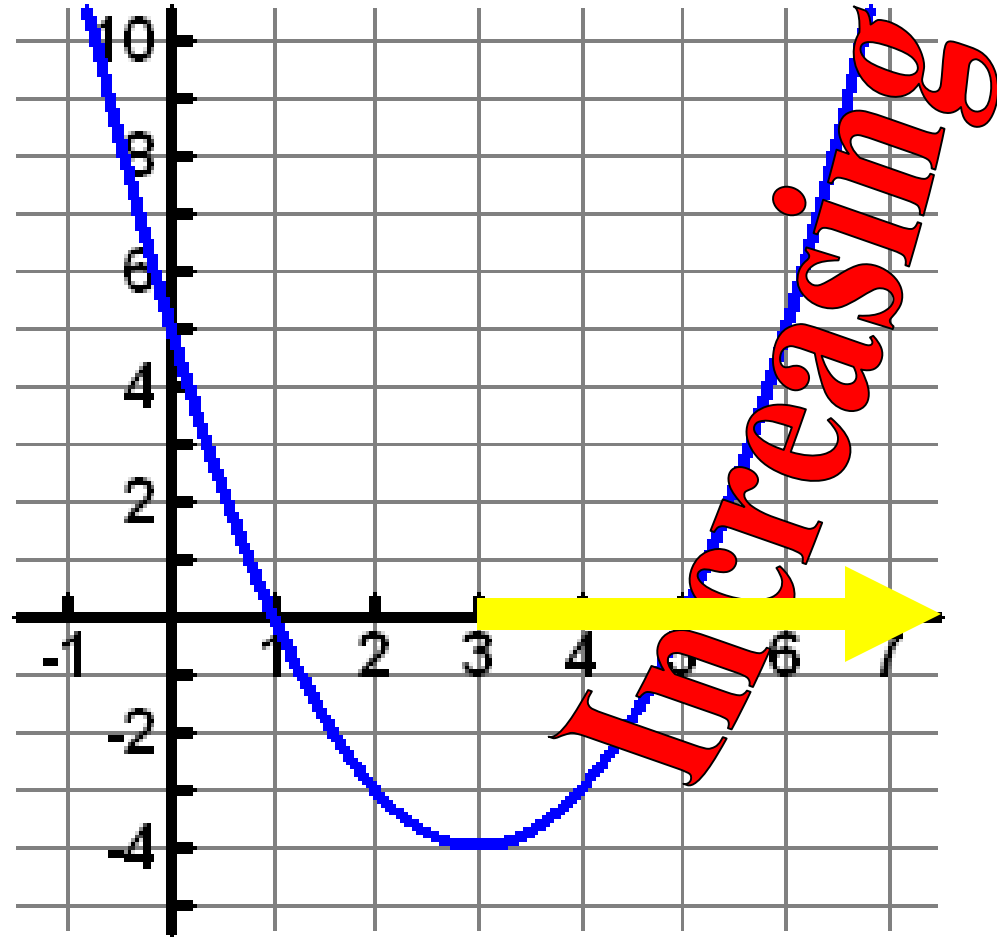




Find the interval of increase

The x-values
where the graph is
going up.

$(3, \infty)$

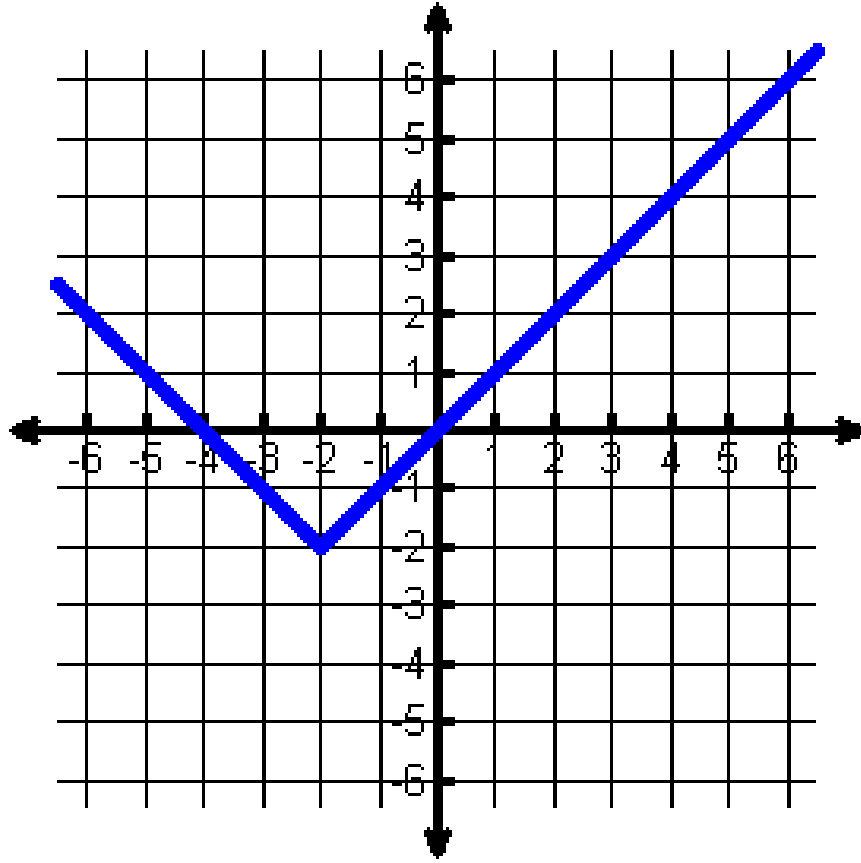




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Interval of increase:

$$(-2, \infty)$$



Interval of decrease:

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



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Interval of increase:

$$(-\infty, -4)$$

Interval of decrease:

$$(-4, \infty)$$

