

NAME:

DATE:

A2.Q1.BERMELLEMO:

FUNCTIONS

(DAY F6)

REVIEW NOTES

A **function** is a special pairing of inputs and outputs where every input has exactly one output.

♦ A function can be presented as a **formula**: $y = f(x)$

EXAMPLE: $f(x) = 3x + 6$

EXAMPLE: $f(x) = \begin{cases} 2x+4 & \text{if } x \geq 1 \\ 4+x & \text{if } x < 1 \end{cases}$

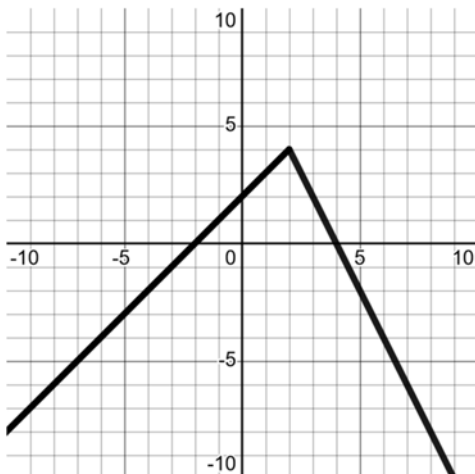
♦ A function can be presented as a **table of values**: (*input* = x , *output* = y)

EXAMPLE: Consider the table of values for the function $y = f(x)$.

x	y
-5	0
-3	1
-2	2
-1	4
0	7
1	6
2	0
3	-2

♦ A function can be presented as a **graph** $y = f(x)$: (*input* = x - axis, *output* = y - axis)

EXAMPLE: consider the graph of $y = f(x)$ below.



1. EVALUATE

A: $f(x) = 3x + 6$

Evaluate $f(-3)$

Evaluate $f(2)$

B: $f(x) = \begin{cases} 2x+4 & \text{if } x \geq 1 \\ 4+x & \text{if } x < 1 \end{cases}$

Evaluate $f(-3)$

Evaluate $f(2)$

C: Consider the table of values for the function $y = f(x)$.

x	y
-5	0
-3	1
-2	2
-1	4
0	7
1	6
2	0
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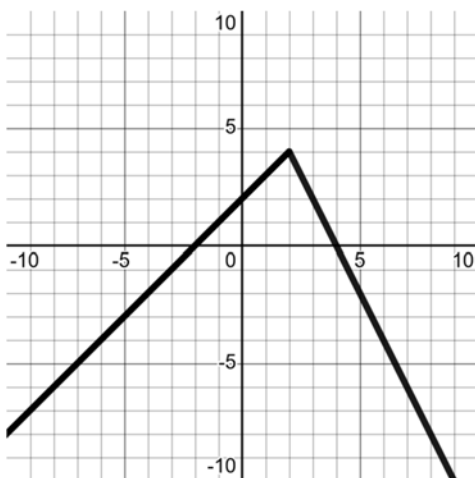
Evaluate $f(-3)$

Evaluate $f(2)$

D: consider the graph of $y = f(x)$ below.

Evaluate $f(-3)$

Evaluate $f(2)$



2. Y-INTERCEPT

A: $f(x) = 3x + 6$ Find the y-intercept. Justify with function notation.

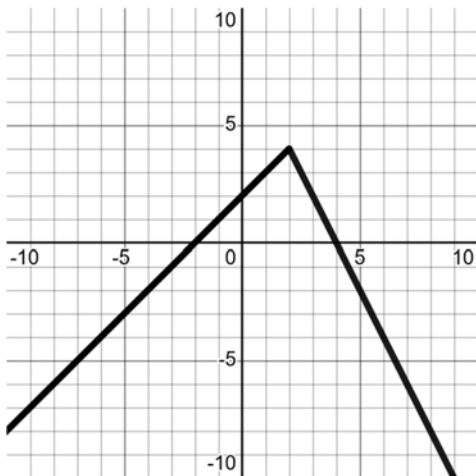
B: $f(x) = \begin{cases} 2x+4 & \text{if } x \geq 1 \\ 4+x & \text{if } x < 1 \end{cases}$. Find the y-intercept. Justify with function notation.

C: Consider the table of values for the function $y = f(x)$.

x	y
-5	0
-3	1
-2	2
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2	0
3	-2

Find the y-intercept. Justify with function notation.

D: Consider the graph of $y = f(x)$ below. Find the y-intercept. Justify with function notation.



3. ZERO OF A FUNCTION

A: $f(x) = 3x + 6$. Determine if $x = -2$ is a zero. Justify with function notation.

B: $f(x) = \begin{cases} 2x+4 & \text{if } x \geq 1 \\ 4+x & \text{if } x < 1 \end{cases}$. Determine if $x = -2$ is a zero. Justify with function notation.

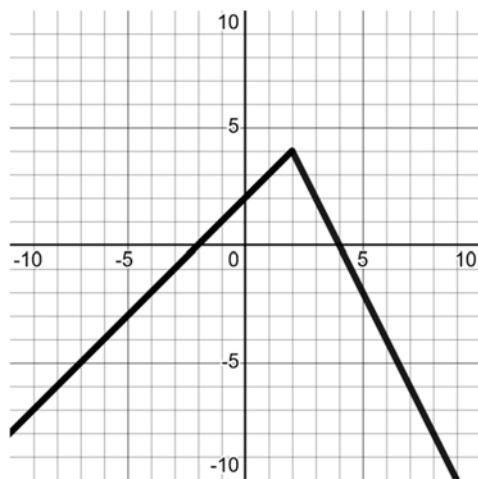
C: Consider the table of values for the function $y = f(x)$.

x	y
-5	0
-3	1
-2	2
-1	4
0	7
1	6
2	0
3	-2

Determine if $x = -2$ is a zero. Justify with function notation.

What are the zero(s) of the function? Justify.

D: Consider the graph of $y = f(x)$ below.



Determine if $x = -2$ is a zero of the function. Justify with function notation.

What are the zero(s) of the function? Justify.

4. FIND X WITH GIVEN OUTPUT

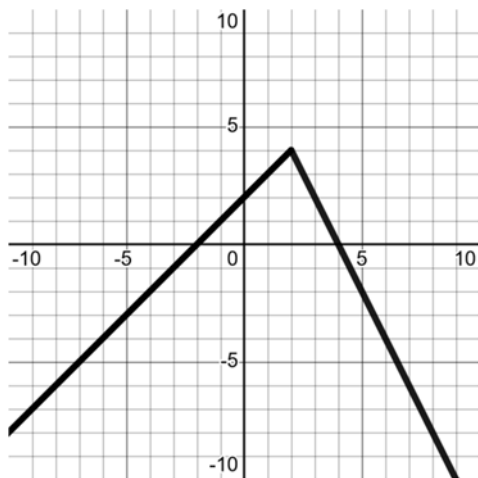
A: $f(x) = 3x + 6$ Determine the value of x where $f(x) = 2$.

C: Consider the table of values for the function $y = f(x)$.

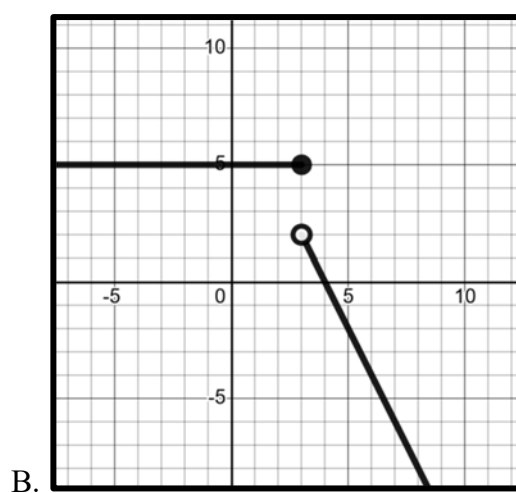
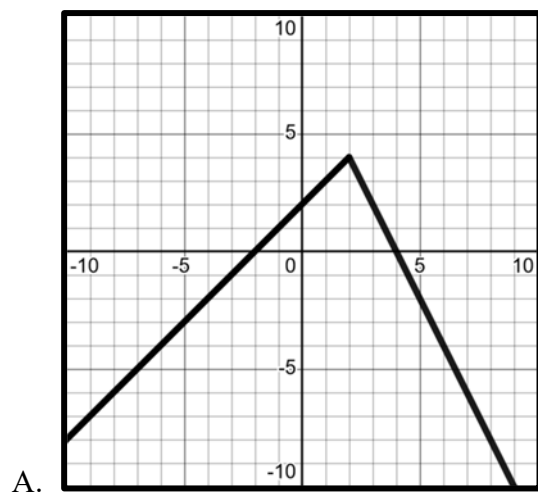
x	y
-5	0
-3	1
-2	2
-1	4
0	7
1	6
2	0
3	-2

Determine the value of x where $f(x) = 2$.

D: consider the graph of $y = f(x)$ below. Determine the value of x where $f(x) = 2$.



5. Determine the intervals of x on which the function is increasing, decreasing, and constant.



5. Use the TI84 calculator to make a quick sketch of the graph of each function.
Show a table of values for each.

A. $f(x) = x^2 - 9$

B. $f(x) = \frac{1}{2}x - 4$

C. $f(x) = |x + 4| - 5$

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