Writing, Evaluating, and Graphing Piecewise Functions Foldable

Thank you for buying my foldable! ©Foresta Math

Please stop back to my store and let me know how the game went. http://www.teacherspayteachers.com/Store/Foresta-Math

Facebook:

Pinterest: https://pinterest.com/forestamath

Email: forestamath@aol.com

Website: http://forestamath.com

Chevron Frames by Mercedes Hutchens http://www.teacherspayteachers.com/Store/Mercedes-Hutchens

Instructions

Print or copy page 3 and 4 double sided. Place the paper so the examples are face up. Cut along the dotted lines to create flaps. Fold the flaps inwards.

Glue the foldable into notes or on a piece of construction paper. Go through the foldable with your students.

Evaluating a Piecewise Function

Graphing a Piecewise Function

What is a Piecewise Function?

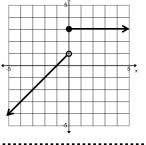
Writing a Piecewise Function

Piecewise Functions

What is a Piecewise Function?

A piecewise function is defined by at least two different rules that apply to different parts of the domain.

Example:
$$f(x) = \begin{cases} x + 1, & \text{if } x < 0 \\ 3, & \text{if } x \ge 0 \end{cases}$$



Evaluating a Piecewise Function

To evaluate a piecewise function, substitute the value of x into the rule for the part of the domain that includes the value of x.

$$f(x) = \begin{cases} x + 4, & \text{if } x \leq 2 \\ 2x - 1, & \text{if } x > 3 \end{cases}$$

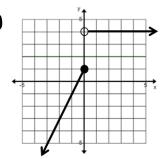
$$f(x) = \begin{cases} x + 4, & \text{if } x \le 2 \\ 2x - 1, & \text{if } x > 2 \end{cases}$$

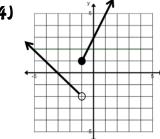
$$f(x) = \begin{cases} x + 1, & \text{if } x \le -3 \\ 4x + 2, & \text{if } x > -3 \end{cases}$$

Writing a Piecewise Function

Write the equation for each function whose graph is shown.

3)

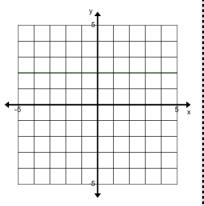




Graphing a Piecewise Function

5) Graph

х	$f(x) = \begin{cases} x + 2, & \text{if } x \le 1 \\ -2x + 4, & \text{if } x > 1 \end{cases}$	У	

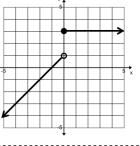


Piecewise Functions

What is a Piecewise Function?

A piecewise function is defined by at least two different rules that apply to different parts of the domain.

Example:
$$f(x) = \begin{cases} x + 1, & \text{if } x < 0 \\ 3, & \text{if } x \ge 0 \end{cases}$$



Evaluating a Piecewise Function

To evaluate a piecewise function, substitute the value of x into the rule for the part of the domain that includes the value of x.

$$f(x) = \begin{cases} x + 4, & \text{if } x \leq 2 \\ 2x - 1, & \text{if } x > 2 \end{cases}$$

Use
$$f(x) = x + 4$$

 $f(1) = 1 + 4 = 5$

$$f(x) = \begin{cases} x + 1, & \text{if } x \le -3 \\ 4x + 2, & \text{if } x > -3 \end{cases}$$

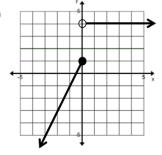
Use
$$f(x) = 4x + 2$$

 $f(-1) = 4(-1) + 2 = -2$

Writing a Piecewise Function

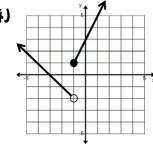
Write the equation for each function whose graph is shown.

3)



 $f(x) = \begin{cases} 2x + 1, & \text{if } x \leq 0 \\ 4, & \text{if } x > 0 \end{cases}$

4.



$$f(x) = \begin{cases} -x - 3, & \text{if } x < -1 \\ 2x + 3, & \text{if } x > -1 \end{cases}$$

Graphing a Piecewise Function

5) Graph

x	$f(x) = \begin{cases} x + 2, & \text{if } x \leq 1 \\ -2x + 4, & \text{if } x > 1 \end{cases}$	у
-1	x + 2 = (-1) + 2	1
0	x + 2 = 0 + 2	2
1	x + 2 = 1 + 2	3
1	-2x + 4 = -2(1) + 4	2
2	-2x + 4 = -2(2) + 4	0

