Writing, Evaluating, and Graphing Piecewise Functions Foldable

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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

What is a Piecewise Function?

Graphing a Piecewise Function

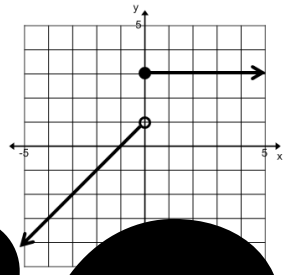
Writing a Piecewise Function

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



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.

1) Find f(1)

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

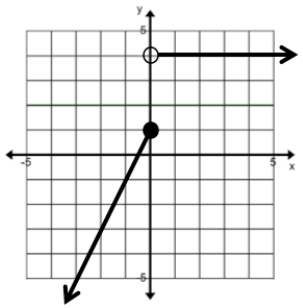
2) Find f(-1)

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

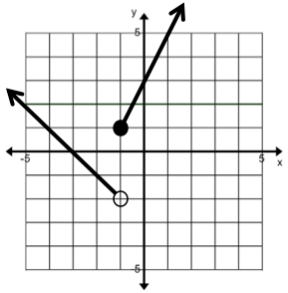
Writing a Piecewise Function

Write the equation for each function whose graph is shown.

3)



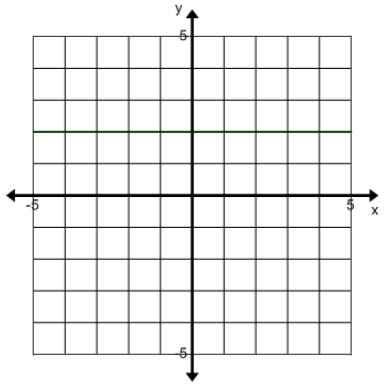
4)



Graphing a Piecewise Function

5) Gra

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



Piecewise Functions

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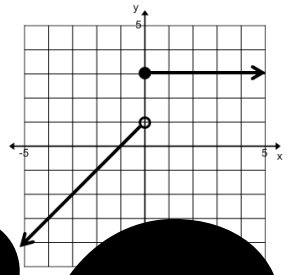

Evaluating a Piecewise Function

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1) Find f(1)

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

Use f(x) = x

f(1) =

2) Find f(-1)

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

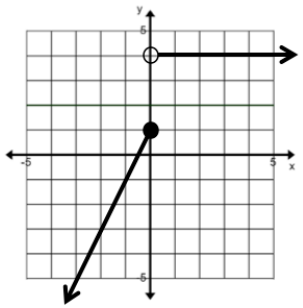
Use f(x) = x + 2

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

Writing a Piecewise Function

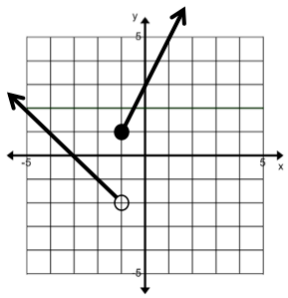
Write the equation for each function whose graph is shown.

3)



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

4)



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

Graphing a Piecewise Function

5) Graph

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