

## Alg2Trig Warm Up Chap 2 Day 4

What polynomial must be added to  $x^2 - 2x + 6$  so that the sum is  $3x^2 + 7x$ ?

- A.  $4x^2 + 5x + 6$
- B.  $3x^2 + 9x + 6$
- C.  $3x^2 + 9x - 6$
- D.  $2x^2 + 9x - 6$
- E.  $2x^2 - 5x + 6$

For the function  $h(x) = 4x^2 - 5x$ , what is the value of  $h(-3)$ ?

- A. -93
- B. -9
- C. 21
- D. 51
- E. 159

\*\*\*7th Block Pictures at 1:15.

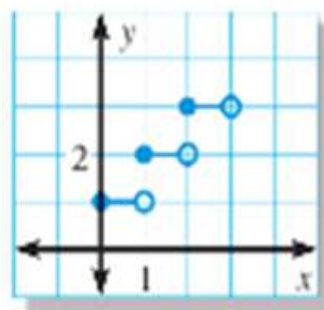
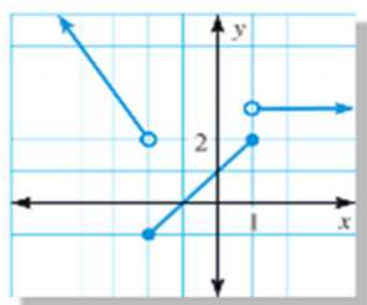
\*Summer HW quiz last 30 minutes\*

## Agenda

- Turn in take home DLT
- Check HW-
- Need any help with line of best fit in the graphing calculator?
- Piecewise lesson-you will need graph paper
- Summer Homework Quiz (last 30 minutes)
- Correlation DLT next class!

Chapter 2  
2.7 Piecewise Functions

# Piecewise Functions



1.) Evaluate the piecewise function at the given values of  $x$ .

Examples

$$f(x) = \begin{cases} 2x + 2 & \text{if } x < 0 \\ -x^2 & \text{if } x \geq 0 \end{cases}$$

$$x = -1, 0, 1$$

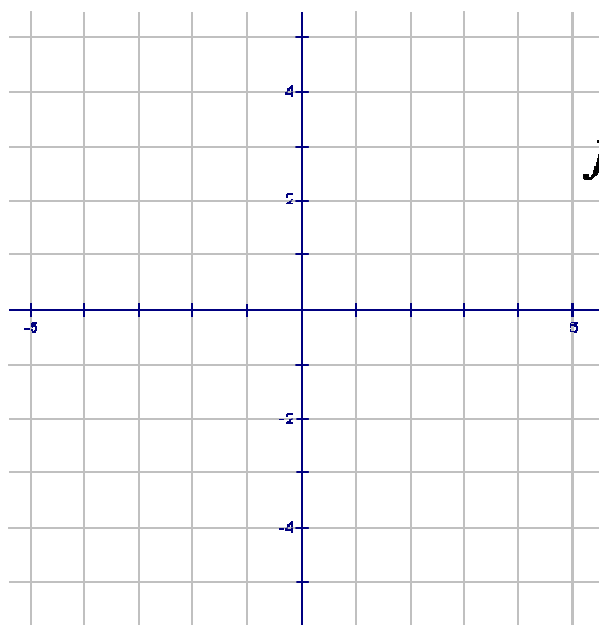
2.) Evaluate the piecewise function at the given values of  $x$ .

Examples

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

$$x = 1, 2, 3$$

3.)

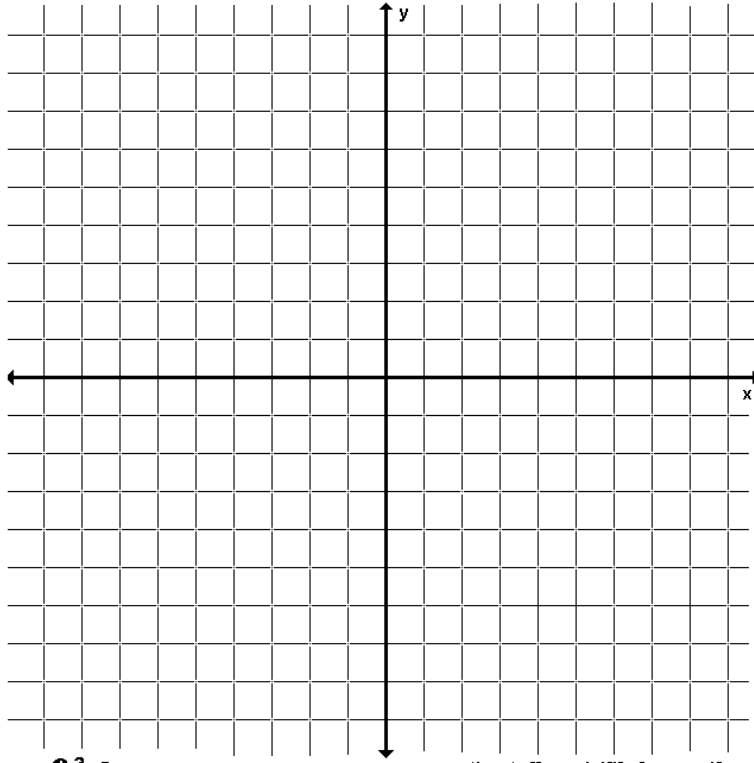


Examples

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

Let's Draw!!!

4.)



$$f(x) = \begin{cases} 3x + 1 & \text{if } x \leq 1 \\ -x + 6 & \text{if } x > 1 \end{cases}$$

Examples

A<sup>2</sup>

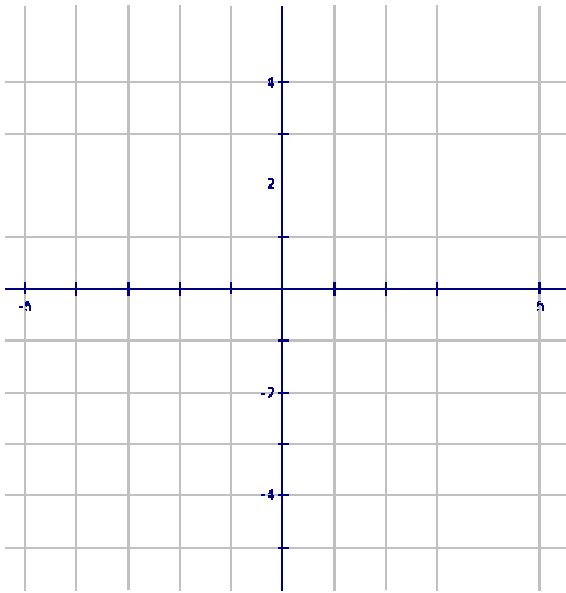
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5.)



Examples

$$f(x) = \begin{cases} -1 & \text{if } -2 \leq x < -1 \\ 0 & \text{if } -1 \leq x < 0 \\ 1 & \text{if } 0 \leq x < 1 \\ 2 & \text{if } 1 \leq x < 2 \end{cases}$$

Warm Up

\*Correlation DLT

\*\*\*Pick one up in front of the tray!

\*Go over Summer Homework Quiz

\*Practice writing equations of lines.

\*Sage n Scribe Piecewise Functions

$$\textcircled{7} f(x) = \begin{cases} 3x-1 & x \leq 4 \\ \frac{1}{2}x+3 & x > 4 \end{cases}$$

$$f\left(-\frac{1}{3}\right) = 3\left(-\frac{1}{3}\right) - 1$$

$$-1 - 1$$

$$\textcircled{-2}$$

$$f(5) = \frac{1}{2}(5) + 3$$

$$\frac{5}{2} + \frac{3 \cdot 2}{1 \cdot 2}$$

$$\frac{5}{2} + \frac{6}{2} = \boxed{\frac{11}{2}}$$

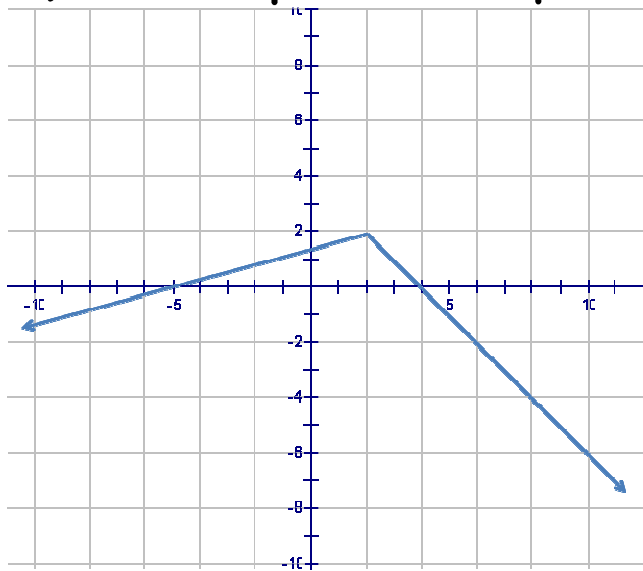
$$g(-2) = 2^{-2} + 1$$

$$\frac{1}{2^2} + 1$$

$$\frac{1}{4} + \frac{4}{4} = \frac{5}{4}$$

6.) Find the piecewise equation!

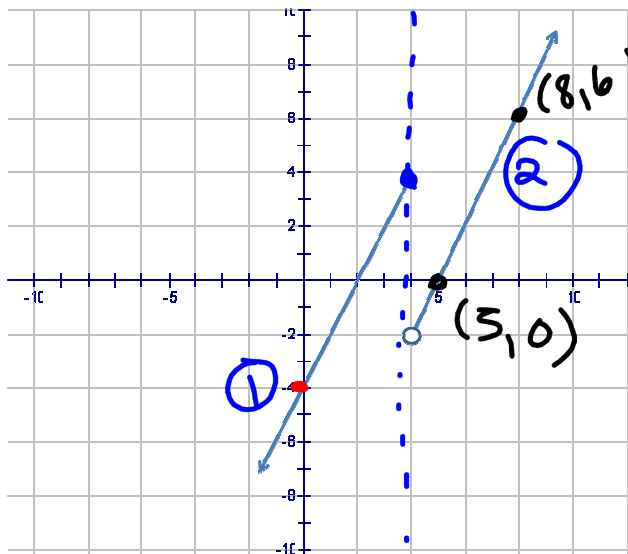
Examples



This is even better!!!

7.) Find the piecewise equation!

Examples



$$f(x) = \begin{cases} 2x - 4 & x \leq 4 \\ 2x - 10 & x > 4 \end{cases}$$

$$y = mx + b$$

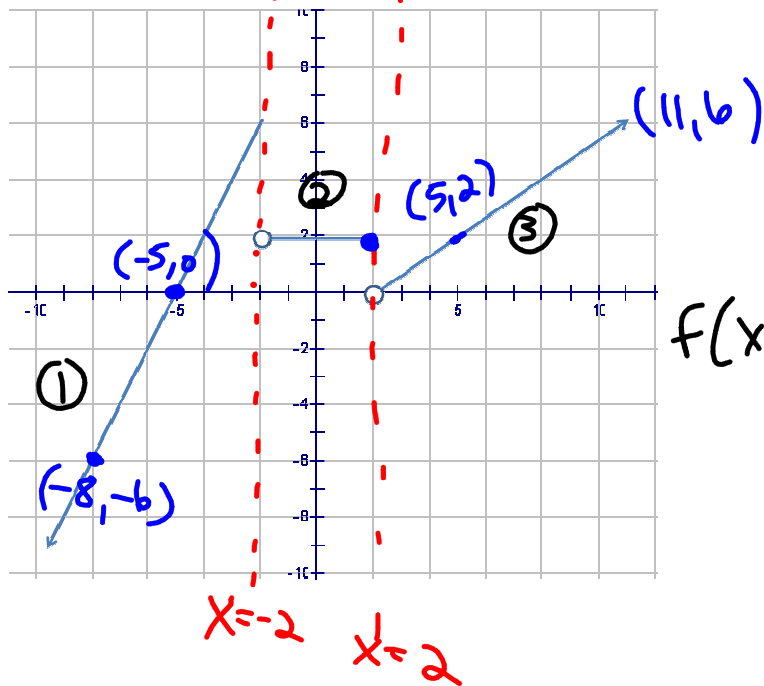
$$\frac{0 - 6}{5 - 8} = \frac{-6}{-3} = 2$$

$$y - 0 = 2(x - 5)$$

$$y = 2x - 10$$

8.) Find the piecewise equation!

Examples



$$f(x) = \begin{cases} \textcircled{1} & 2x + 10 & x \leq -2 \\ \textcircled{2} & 2 & -2 < x \leq 2 \\ \textcircled{3} & \frac{2}{3}x - \frac{4}{3} & x > 2 \end{cases}$$

Are you getting it???

In mathematics, a **piecewise-defined function** (also **called a piecewise function** or a **hybrid function**) is a **function** defined by multiple **sub-functions**, each **sub-function** applying to a certain interval of the main **function's** domain, a **sub-domain**.



Homework:

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WS