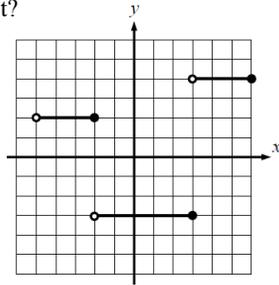


DO NOW

The step function $g(x)$ is shown on the grid below.

Ji Hwan states that the range of this function is $-3 \leq y \leq 4$. Is he correct? Why or why not?

$\{-3, 2, 4\}$



Jan 26-12:07 AM

Joe had a summer job that pays \$7.00 an hour and he worked between 15 and 35 hours every week. His weekly salary can be modeled by the equation: $S = 7h$, where S is his weekly salary and h is the number of hours he worked in a week.

a. Describe the domain and range for this problem using appropriate notation.

Domain: $[15, 35]$

Range: $[105, 245]$

b. What does the ordered pair (20, 140) mean in this problem?

Jan 13-11:24 AM

The event center at the Turning Stone resort has a seating capacity of 5,000 seats. The amount of money brought in by an entertainment event, M , is a function of the number of people, n , in attendance. Each ticket costs \$55.

a. Write a function to model the money brought in, M , in relation to the people, n , in attendance.

$M(n) = 55n$

b. What is the domain of this function (in context)?

$[0, 5000]$

c. What is the range of this function (in context)?

$[0, 275,000]$

Jan 29-1:25 PM

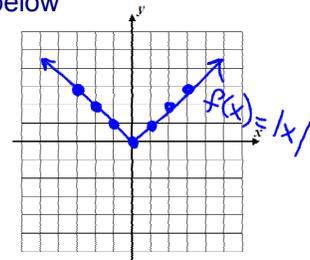
The Absolute Value Function

$f(x) = |x|$

Can be defined as $f(x) = \begin{cases} -x, & x < 0 \\ x, & x \geq 0 \end{cases}$

Graph $f(x)$ on the grid below

$$\begin{array}{r} x \\ 3 \\ 2 \\ 1 \\ 0 \\ -1 \\ -2 \end{array} \quad \begin{array}{r} y \\ 5 \\ 4 \\ 3 \\ 2 \\ 1 \\ 0 \\ -1 \\ -2 \end{array}$$



Jan 26-12:23 AM

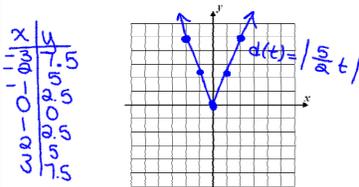
To determine the x -value where an absolute value graph turns, find the value that makes the expression inside the absolute value zero.

Given $d(t) = \left| \frac{5}{2}t - 3 \right|$ T.P.
 $\frac{5}{2}t - 3 = 0$
 $\frac{5}{2}t = 3$
 $t = 0$

a) Write $d(t)$ as a piecewise function that does not include absolute value symbols

$d(t) = \begin{cases} -\frac{5}{2}t + 3, & t < 0 \\ \frac{5}{2}t - 3, & t \geq 0 \end{cases}$

b) Graph the function $d(t)$ on the coordinate grid



Jan 29-1:41 PM

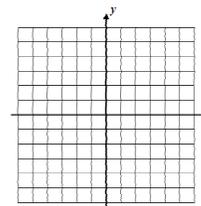
Given $f(x) = |x - 3|$ $-1(x - 3)$

First, identify the turning point (Set the expression inside the absolute value = 0!)

a) Write $f(x)$ as a piecewise function that does not include absolute value symbols

T.P. $x - 3 = 0$
 $x = 3$
 $f(x) = \begin{cases} -x + 3, & x < 3 \\ x - 3, & x \geq 3 \end{cases}$

b) Graph the function $f(x)$ on the coordinate grid



Jan 26-12:49 AM

Graph $f(x) = |x| - 3$

Find the Turning Point
 $x = 0$

Create a table of values and graph

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

Jan 26-12:49 AM

Graph $f(x) = -|3x|$

Find the Turning Point
 $\frac{3}{3}x = \frac{0}{3} \quad x = 0$

Create a table of values and graph

x	y
-2	-6
-1	-3
0	0
1	-3
2	-6

Jan 26-12:49 AM

Here's another example: $f(x) = 2|x + 3| - 4$.

What makes $(x + 3)$ negative?
 This means that when $x < -3$, $f(x) = 2(-x - 3) - 4$

We can write
 $f(x) = -2x - 10; x < -3$

What makes $(x + 3)$ positive?
 This means that when $x \geq -3$, $f(x) = 2(x + 3) - 4$

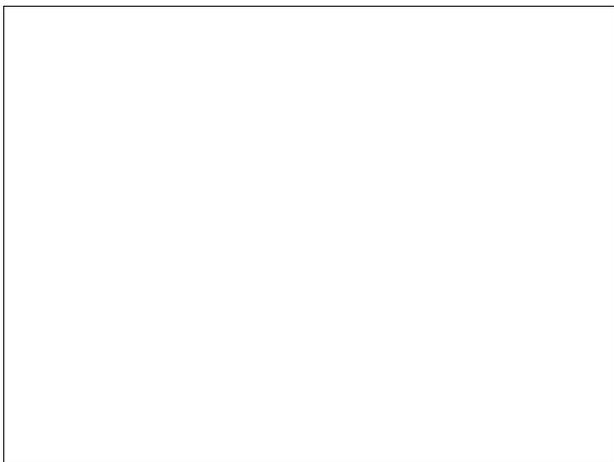
We can write
 $f(x) = 2x + 2; x \geq -3$

Jan 29-1:52 PM

As a piecewise function we have

$$f(x) = \begin{cases} -2x - 10; & x < -3 \\ 2x + 2; & x \geq -3 \end{cases}$$

Jan 29-2:12 PM



Feb 4-11:10 AM