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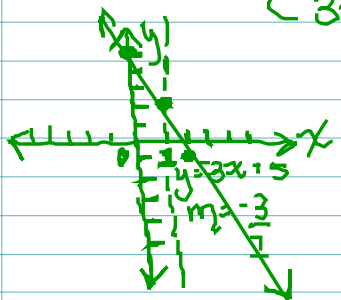
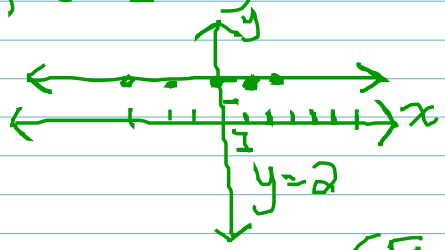
Quiz today!
Next test in 7 days!

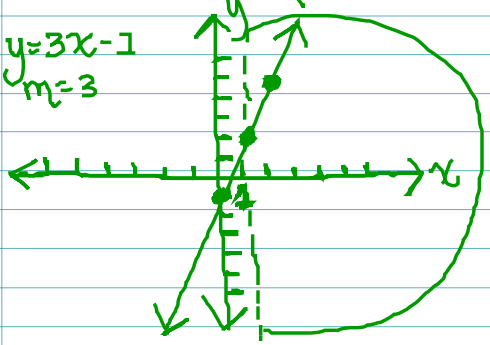
Tuesday June 9th

20) $f(x) = \begin{cases} -3x+5 & \text{if } 0 < x < 1 \\ 2 & \text{if } x = 1 \\ 3x-1 & \text{if } x > 1 \end{cases}$

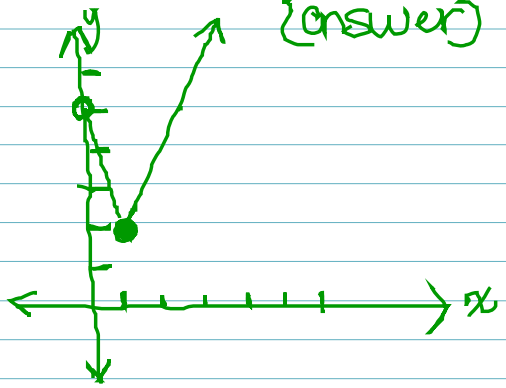
< 1 → ○
≤ 1 → ●







Finish answer



Domain: $(0, \infty)$
Range: $[2, \infty)$

yes, it's continuous.

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Quiz today!

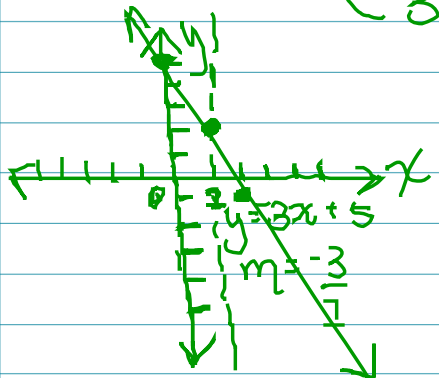
Next test in [7] days!

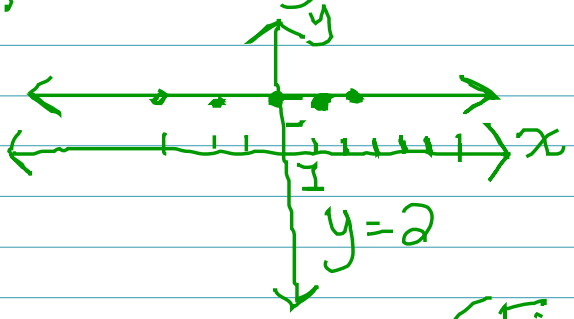
Tuesday June 9 1105

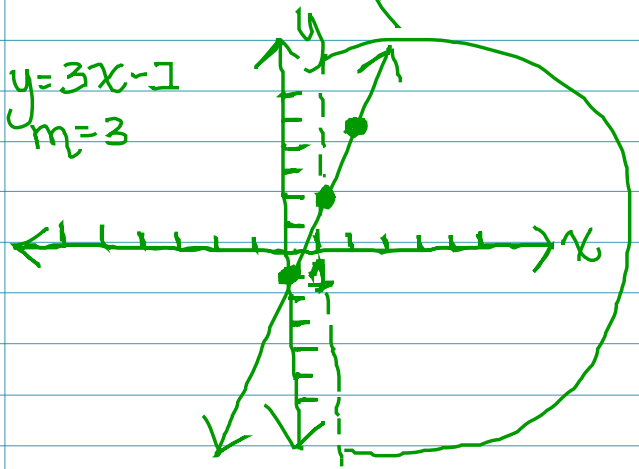
(20) $f(x) = \begin{cases} -3x+5 & \text{if } 0 < x < 1 \\ 2 & \text{if } x = 1 \\ 3x-1 & \text{if } x > 1 \end{cases}$

$< \rightarrow$ open circle

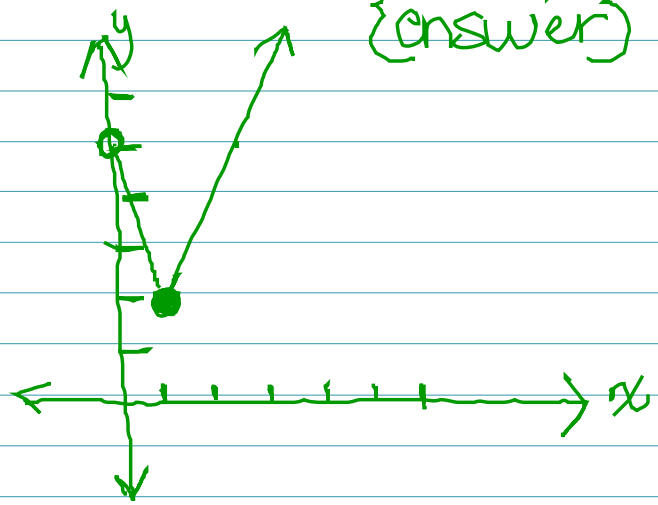
$\leq \rightarrow$ closed circle







Finish answer

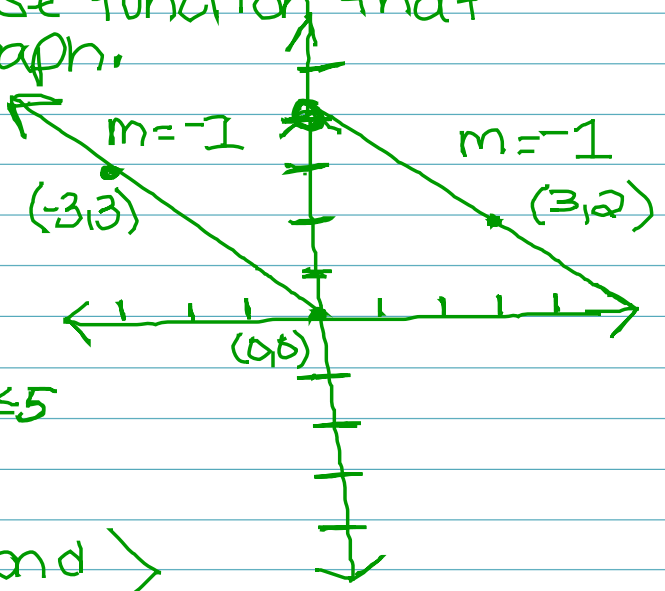


Domain: $(0, \infty)$

Range: $[2, \infty)$

yes, it's continuous. !!

(26) Write the piecewise function that describes the graph.



$$f(x)\begin{cases} -x & \text{if } x \le 0 \\ -x+5 & \text{if } 0 < x \le 5 \end{cases}$$

We need a point and a slope.

Point: $(-3,3)$ → not a y-intercept
Slope: -1

$$y-y_1 = m(x-x_1)$$

$$y-3 = -1(x-(-3))$$
$$y-3 = -1(x+3)$$
$$y-3 = -x-3$$
$$y = -x \longrightarrow f(x) = -x$$

Point: $(0,5)$ → y-intercept $\quad y = mx+b$
Slope: -1

$$y = -x+5 \rightarrow f(x) = -x+5$$

moving on to § 3.5 ⟶

Smartthinking

- Start at Valencia website.
- Log into Atlas.
- Click "Courses" tab at top left.
- Under "My courses" → Click "Smartthinking!"
- yes or no to ipad question, or "x" out. (optional)
- most of the time, you will use "Drop In Tutoring".
- Click "Algebra".
- Click "start" to begin session.
- Put problem on whiteboard before clicking "Enter Question".

§ 3.5 Graphing Techniques: Transformations

Applying Horizontal / Vertical Shifts

- If x is replaced by $x-h$, parentheses are used.

"h" tells you the direction of the shift.

"h" is the number being subtracted.

§ 3.5 cont.

Remember → "h" is the number being subtracted.

{Subtraction → go right}
{addition → go left}

"h" is horizontal shift, "k" is the vertical shift

(13 and 14) Write the function whose graph is the graph of $y=\sqrt{x}$, but is shifted to the left 3 units as well as up 5 units.

READ

→ For a horizontal shift, replace x with $x-h$, where h is the direction of shift.
For example
$h=3 \Rightarrow$ Shift right 3
$h=-4 \Rightarrow$ Shift left 4

For a vertical shift, add or subtract at the end to move up or down. (outside)
$k=1 \Rightarrow$ Shift up 1
$k=-2 \Rightarrow$ Shift down 2

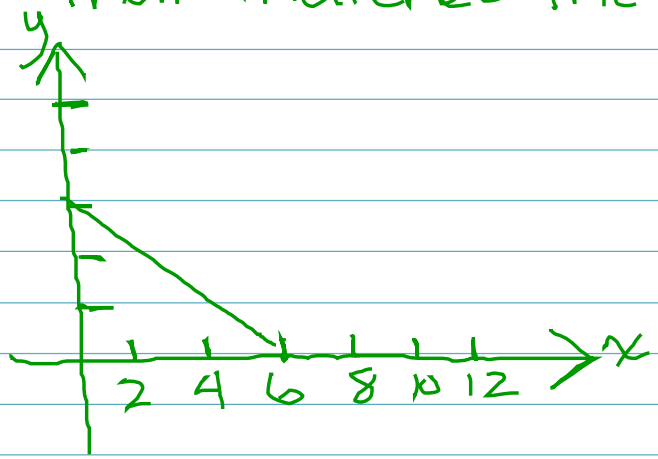
(13, 14)

$y=\sqrt{x}$ shifted left 3, up 5

$h=-3$ replace x w/ $x-h$
replace x w/ $-(-3)$
→ replace x w/ $x+3$
→ add 5 at the end

$y=\sqrt{x} \Rightarrow \boxed{y=\sqrt{x+3}+5}$

(12) Write the equation of the function that matches the graph.



$f(x) = |x|$

$h = 6$

replace x w/ $x-h$

replace x w/ $x-6$

$$\boxed{y = |x-6|}$$