

Jan. 18, 2017

Sect. 2-5

Piecewise Funct.

Defn.

Evaluate

Graphing

Defn: A fcn. defined on
pieces of domain

$$\text{eg. } f(x) = \begin{cases} 2x, & x < 5 \\ 5x + 7, & x \geq 5 \end{cases}$$

Evaluate

$$f(x) = \begin{cases} 5x - 7, & -3 \leq x < 1 \\ 2x, & 1 \leq x < 7 \\ -3x + 35, & x \geq 7 \end{cases}$$

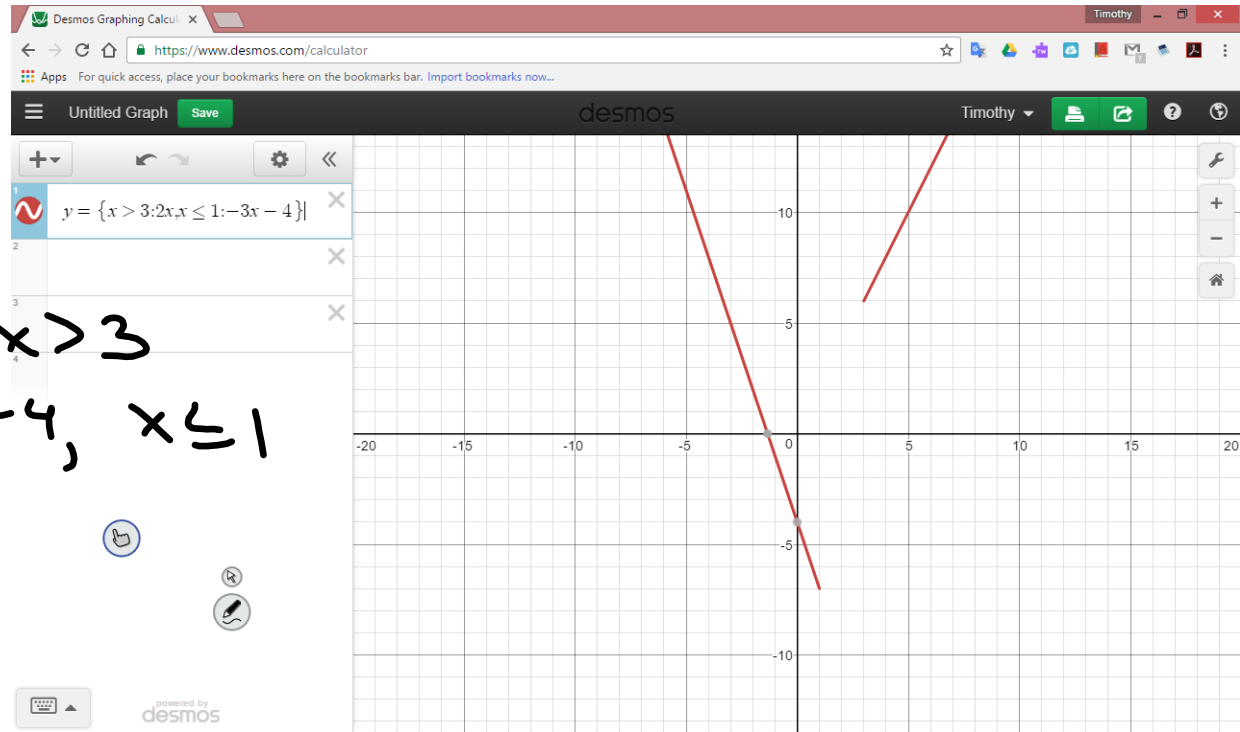
$$f(0) = 5(0) - 7 = -7$$

$$f(2) = 2(2) = 4$$

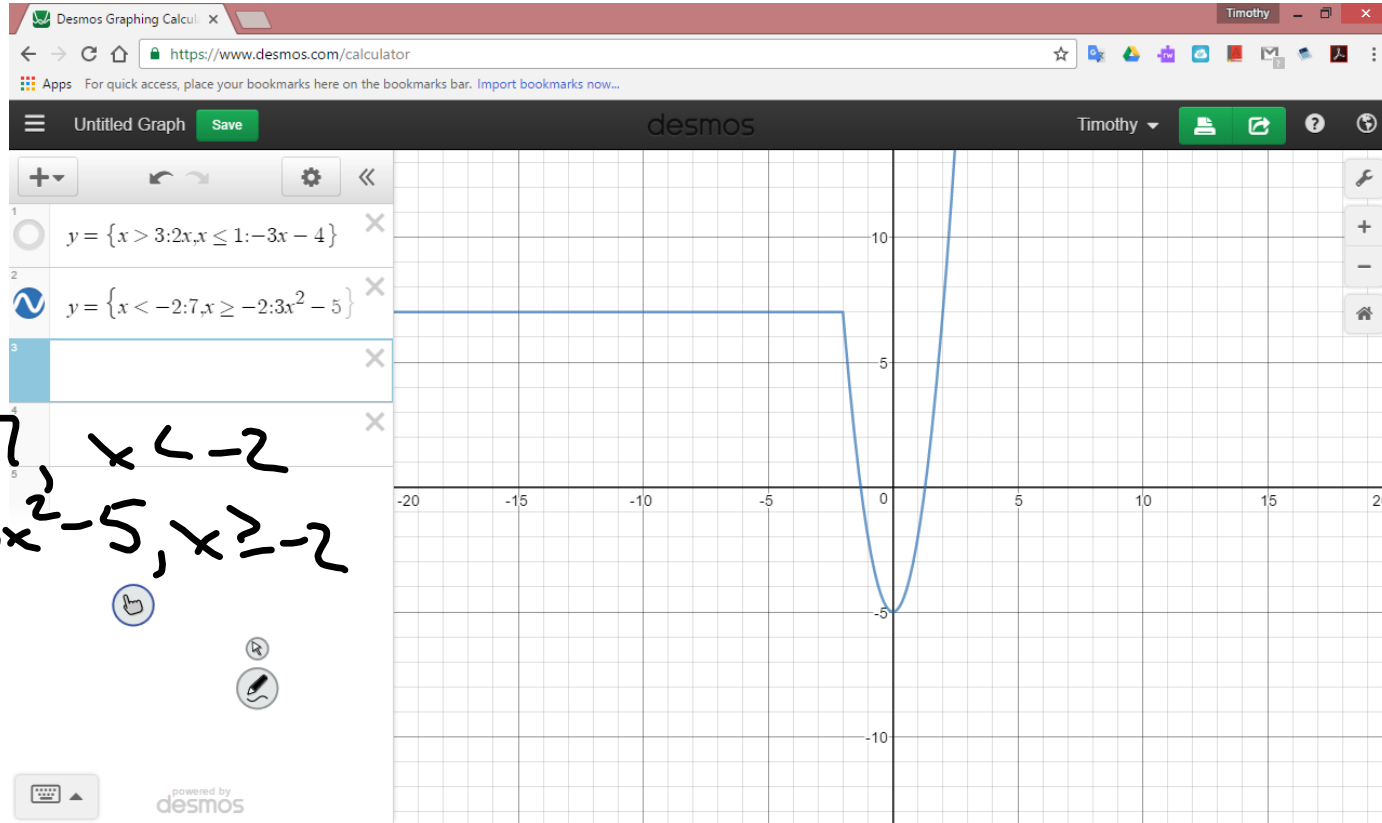
$$f(8) = -3(8) + 35 = 11$$

$$f(-4) = \text{undef.}$$

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



$$f(x) = \begin{cases} 7, & x < -2 \\ 3x^2 - 5, & x \geq -2 \end{cases}$$



Continuity?

Do the pieces touch?

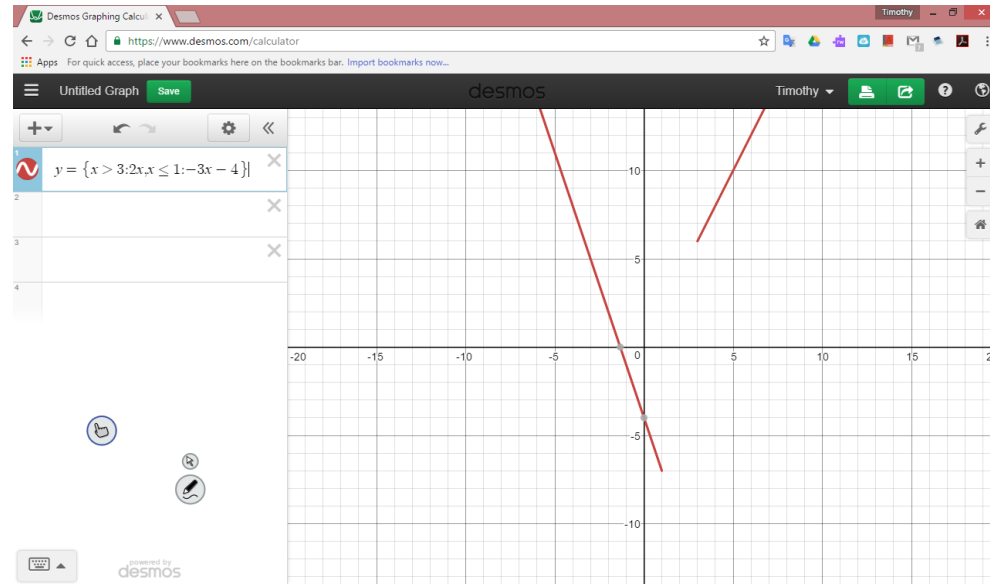
Look at last two graphs

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

Clearly, not
continuous

Look at domain
pieces

"gap" between
1 and 3.



$$f(x) = \begin{cases} 7, & x < -2 \\ 3x^2 - 5, & x \geq -2 \end{cases}$$

Yes, continuous

