

Quiz #1

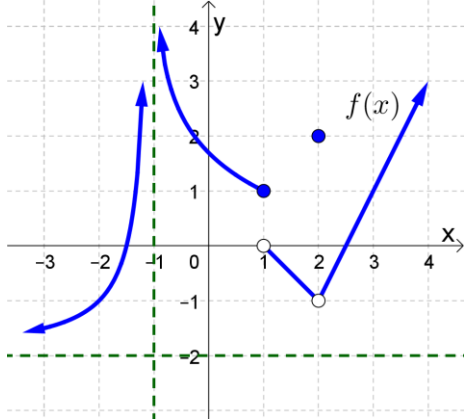
Name: _____

Math 180, Prof. Beydler

Wednesday, March 11, 2020

Directions: Phones, books, and notes must be put away in your bag (not in your pockets). A **scientific calculator** is allowed. Show all work. Write your answers in the indicated places, or box your answers. Do your best! 😊

1. (3 points) Find each of the following. No need to show work here.



$$\lim_{x \rightarrow 1} f(x)$$

$$\lim_{x \rightarrow 1^-} f(x)$$

$$\lim_{x \rightarrow 2^+} f(x)$$

$$\lim_{x \rightarrow -1^+} f(x)$$

$$\lim_{x \rightarrow \infty} f(x)$$

$$\lim_{x \rightarrow -\infty} f(x)$$

2. (2 points) Find the following.

$$\lim_{x \rightarrow -2^+} \frac{2x-3}{x+2}$$

Answer: _____

3. (2 points) Find the following.

$$\lim_{x \rightarrow 2^-} \tan^{-1}(\ln(2-x))$$

Answer: _____

4. (2 points) Find the following. Be sure to show your work.

$$\lim_{x \rightarrow 0} \frac{\sqrt{x+4}-2}{x}$$

Answer: _____

5. (2 points) Find the following. Be sure to show your work/reasoning.

$$\lim_{x \rightarrow \infty} \frac{\sqrt{4x^2 - 3x + 1}}{3x + 5}$$

Answer: _____

6. (2 points) Use the Squeeze Theorem to prove that $\lim_{x \rightarrow 0} x^2 \cos\left(2 - \frac{1}{x}\right) = 0$.

7. (2 points) Sketch the graph of an example of a function f that satisfies $\lim_{x \rightarrow -\infty} f(x) = -1$, $\lim_{x \rightarrow 1} f(x) = 2$, $\lim_{x \rightarrow \infty} f(x) = -\infty$, and $f(1) = 4$. Be sure to draw any asymptotes of f .

