Quiz 2 Solution

January 19, 2018

1. (2 points) Sketch a graph of a function satisfying both:

- f(2) = 0
- $\lim_{x \to 2} f(x) = 3$

Possible Answer:



2. (2 points) Evaluate $\lim_{x\to 2} \frac{x^2 - x - 2}{x^2 + 3x - 10}$ analytically.

Solution: When we try direct substitution, we get $\frac{0}{0}$, which means we should be able to factor and cancel.

$$\lim_{x \to 2} \frac{x^2 - x - 2}{x^2 + 3x - 10} = \lim_{x \to 2} \frac{(x - 2)(x + 1)}{(x + 5)(x - 2)}$$
$$= \lim_{x \to 2} \frac{(x + 1)}{(x + 5)} \text{ by cancelling } x - 2$$
$$= \frac{3}{7} \text{ by direct substitution}$$

Answer: $\frac{3}{7}$

3. (1 point) How many points is each quiz worth?Answer: 5 points