Name: _____

Quiz 3

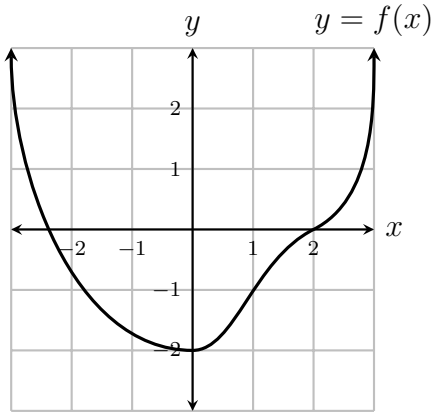
MATH 200, Section 1

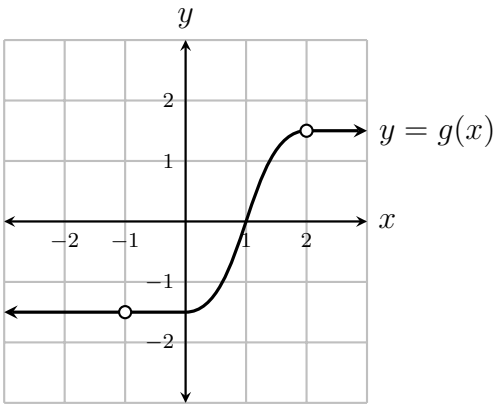
February 12, 2021

Directions: Closed book, closed notes, no calculators. Each problem is 10 points, for a total of 20 points.

By submitting this quiz you affirm that you agree with this statement: *On my honor, I have neither given nor received unauthorized aid on this assignment, and I pledge that I am in compliance with the VCU Honor System.*

1. Answer the following questions involving the two functions graphed below.





   (a) $\lim_{x \to 1} f\big(g(x)\big) =$

   (b) $\lim_{x \to 1} f(x)g(x) =$

   (c) $\lim_{x \to 1} \cos\big(f(x)g(x)\big) =$

   (d) $\lim_{x \to 2} \dfrac{\sin\big(f(x)\big)}{\pi f(x)} =$

   (e) At which x (if any) is $g(x)$ discontinuous?

2. Sketch the graph of **one** function f that meets **all** of the following criteria.

   (a) The domain of f is the interval $[-5, 5]$.

   (b) f is continuous at all x in $[-5, 5]$ **except** at $x = -1$ and $x = 3$.

   (c) $\lim_{x \to -1^+} f(x) = 1$

   (d) $\lim_{x \to -1^-} f(x) = 2$

   (e) $\lim_{x \to 3} f(x) = -1$