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QUIZ 2

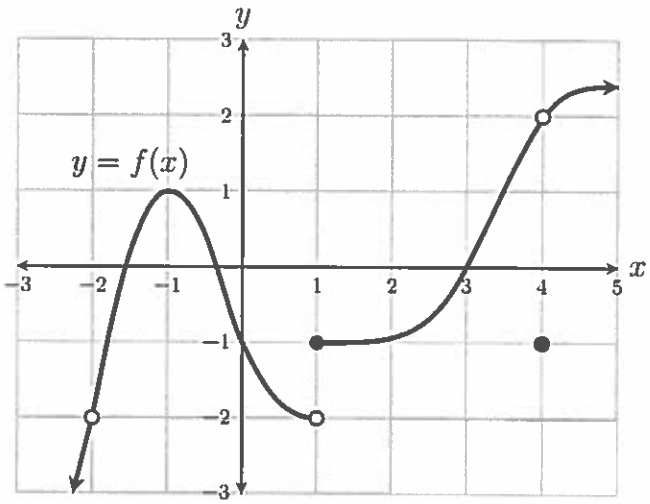
MATH 200, SECTION 9

February 5, 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 questions about the function graphed below. (Short answer; no need to show work.)



(a) $f(4) =$ $\boxed{-1}$

(b) $\lim_{x\to 4} f(x) =$ $\boxed{2}$

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

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

(e) $\lim_{x\to -1} \sqrt{\dfrac{f(x)-1}{4x}} = \sqrt{\lim_{x\to -1} \dfrac{f(x)-1}{4x}}$

$= \sqrt{\dfrac{1-1}{4(-1)}} = \sqrt{0} = \boxed{0}$

2. Find: $\lim_{x\to 5} \dfrac{x^3 - x^2 - 20x}{x^2 - 7x + 10}$ (You must show work to receive credit.)

$= \lim_{x\to 5} \dfrac{x(x^2 - x - 20)}{(x-5)(x-2)}$

$= \lim_{x\to 5} \dfrac{x(x-5)(x+4)}{(x-5)(x-2)}$

$= \lim_{x\to 5} \dfrac{x(x+4)}{x-2} = \dfrac{5(5+4)}{5-2} = \dfrac{5\cdot 9}{3} = \boxed{15}$