Math 131 - Quiz 2

January 30, 2020

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due no later than 3:15pm on February 4.

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1. (3 points) Evaluate each limit analytically. DO NOT USE A CALCULATOR.

    (a) $\displaystyle \lim_{x \to 1} \frac{x^5 - 7x}{2x^2 - x}$

    (b) $\displaystyle \lim_{x \to 4} \left(5\sqrt{x} - \sin(\pi x) + x^2 - 1\right)$

2. (3.5 points) Explain why the limit laws cannot be used to evaluate the following limit. Then use a different technique to find or estimate the limit.

$$\lim_{x \to 3} \frac{2x^2 - 18}{x - 3}$$

3. (3.5 points) Explain why the limit laws cannot be used to evaluate the following limit. Then use a different technique to find the limit analytically.

$$\lim_{x \to 0} \frac{(x+2)^2 + 3(x+2) - 10}{x}$$