Math 131 - Quiz 3 (IC)

February 27, 2020

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Use the appropriate differentiation rules to determine the derivative of each function.

    (a) $f(x) = 4x^3 - 7x^2 + x - 9$

    (b) $y = \dfrac{1}{t} + t^{3/5} + \sqrt{t}$

2. (2 points) Find an equation of the line tangent to the graph of $f(x) = \sqrt{x}$ at the point where $x = 4$.

Math 131 - Quiz 3 (TH)

February 27, 2020

Name _____

Score _____

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

1. (2 points) The following table gives information about the functions f and g.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
0	-7	0	4	2
1	-8	-1	7	5
2	-7	4	DNE	DNE
3	2	15	1	5

   Use this information to find an equation of the line tangent to the graph of $y = f(x)g(x)$ at the point where $x = 1$.

2. (2 points) An object is thrown straight up from over the side of a 110-ft building. If the object's initial velocity is 50 ft/sec, how high will it go and when will it land on the ground.

3. (1 point) Find $f''(x)$ if $f(x) = 8 \sec x$.

4. (1 point) Find the instantaneous rate of change of $g(x) = \dfrac{\sqrt{x} + 6}{x^2 - 5x}$ at the point $(4, -2)$.