NAME: _____

MATH 132 - Michigan State University
September 21st, 2018.

Quiz 3

Clear your desk of everything except pens, pencils and erasers. **Show all your work.**
If you have a question raise your hand and I will come to you.

I. Multiple Choice

Find the following limits:

1. [1 pt.] $\lim_{x\to 0} \dfrac{\sin(x^2+6x)}{x}$

(a) 0

(b) 1

(c) -1

(d) 6

(e) DNE

2. [1 pt.] $\lim_{x\to 64} \dfrac{\sin(\sqrt{x}-8)}{x-64}$

(a) 1/64

(b) 16

(c) 64

(d) 1/16

(e) 0/0

II. Standard Response

Find the first derivatives of each of the functions below. **You do not need to simplify!**

3. [1 pt.] $f(x) = \cos^3(x)$

$f'(x) =$

4. [1 pt.] $f(x) = (1+2x)^3 \sin(x)$

$f'(x) =$

5. [1 pt.] $f(x) = \tan(x)(x^5 - \cos(2x))$

$f'(x) =$

6. [1 pt.] $f(x) = \sec(\sin(x^2 + x))$

$f'(x) =$

7. [1 pt.] $f(x) = \dfrac{x}{\tan(x^2 - 1)}$

$f'(x) =$

8. [1 pt.] $f(t) = 7\sec(t)\tan\left(\dfrac{3}{t}\right)$

$f'(t) =$

9. [1 pt.] $f(x) = \left(\dfrac{1}{x} + 1\right)(2\sqrt{x^2 + 1} - 1)$

$f'(x) =$

10. [1 pt.] $f(y) = 6\tan(3\sin(y))$

$f'(y) =$