Name: _____

Instructor: _____

Math 10560, Quiz 7 Tutorial
March 28, 2017

- The Honor Code is in effect for this quiz. All work is to be your own.
- No calculators.
- The quiz lasts for 25 Minutes .
- Be sure that your name is on every page in case pages become detached.
- Be sure that you have all 4 pages of the test.

PLEASE MARK YOUR ANSWERS WITH AN X, not a circle!

1.	(a)	(b)	(c)	(d)	(e)
2.	(a)	(b)	(c)	(d)	(e)
3.	(a)	(b)	(c)	(d)	(e)
4.	(a)	(b)	(c)	(d)	(e)
5.	(a)	(b)	(c)	(d)	(e)

Name: _____

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Multiple Choice

1.(2 pts) Evaluate the following improper integral $\int_0^{\pi} \sec^2 x \, dx$.

(a) 0

(b) 1

(c) Diverges

(d) $\frac{\pi}{2}$

(e) $\frac{1}{2}$

2.(2 pts) Use Euler's method with step size 0.2 to estimate $y(1.6)$ where $y(x)$ is the solution to the initial value problem

$$y' = \frac{x - y}{2}, \quad y(1) = 0.$$

(a) 0.21 (b) 1.11 (c) 1.21 (d) 0.111 (e) 0.11

Name: _____

Instructor: _____

3.(2 pts) Find $\displaystyle\sum_{n=1}^{\infty}\left[\frac{(-1)^{n-1}3^n}{9^n}+\frac{2}{9^{n-1}}\right]$.

(a) $-\frac{8}{4}$ (b) $\frac{4}{9}$ (c) $\frac{10}{4}$ (d) 3 (e) $\frac{8}{4}$

4.(2 pts) Find the sum of the following series

$$\sum_{n=1}^{\infty}\left[\frac{\ln(n+1)}{n+2}-\frac{\ln(n+2)}{n+3}\right].$$

(a) 0 (b) This series diverges (c) $\frac{\ln(2)}{2}$

(d) $\frac{\ln(2)}{3}$ (e) $\ln(2)$

Name: _____

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5.(2 pts) The sequence given by $a_n = \dfrac{\sin(1/n)}{\arctan(n)}$

(a) converges to 1.

(b) converges to $\dfrac{\pi}{2}$.

(c) converges to 0.

(d) converges to $\dfrac{2}{\pi}$.

(e) diverges.