EXAM (2) FORM A

Name: **ID #** **Sec # (11) (28)**

Question	Mark
MCQ (1-6)	
7	
8	
9	
10	
Bonus	

Eid Mubarak. Say bismillah and start.

Circle the correct answer in questions (1 – 5):

1) $\lim_{h\to 0}\frac{1-\cos 7h}{\cos 5h-1}$

Similar to 31/2.6

a) $\frac{-5}{7}$ b) $\frac{-7}{5}$ c) $\frac{-25}{49}$ d) $\frac{-49}{25}$ e) 0

2) Given that $f(x)=\sqrt{x+1}$. Find the slope of the tangent line at a=8

13/3.2

a) $\frac{1}{6}$ b) $\frac{1}{5}$ c) $\frac{1}{4}$ d) $\frac{1}{7}$ e) $\frac{1}{8}$

3) If $f(x)=\frac{x+1}{x}$. Then $f''(1)=$

45/3.3

a) 0 b) 1 c) 2 d) -1 e) -2

4) If $f(x)=x\sin x-3\cos x$. Then $f''(p)=$

21/3.4

a) 5 b) -5 c) $\frac{p}{2}$ d) $\frac{-p}{2}$ e) p

5) If $f(x)=-2\sqrt{\cos(5x)}$. Then $f'(0)=$

23/3.5

a) 0 b) 5 c) -5 d) 2 e) -2

6) Find $\lim_{x\to 0}(1-4x)^{\frac{2}{x}}=$

Similar to 57/4.2

a) e^4 b) e^{-8} c) e^2 d) e^{-4} e) e^8

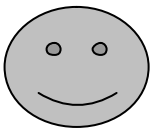
7) Let $f(x) = \frac{x^3}{x^2+1}$ and $g(x) = f^{-1}(x)$. Find $g''(\frac{1}{2})$ **(SHOW ALL YOUR WORK)**

8) Find $\frac{dy}{dx}$, $y = (x^3 - 2x)^{\ln x}$ **(SHOW ALL YOUR WORK)** (43/4.3)

9) Find all values in the interval [0,2] at which the graph of f has a horizontal tangent line.
$f(x)=\ln(\cos e^{x})$. **(SHOW ALL YOUR WORK)** (30/4.3 and 29/3.4)

10) Find an equation for the line that is tangent to the curve $x = \ln(y \tan x)$ at $x = \frac{p}{4}$.

(SHOW ALL YOUR WORK) (Similar to 32/4.3)



BONUS QUESTION

Find $\frac{d^{100}}{dx^{100}}[e^x \sin x]$. **(SHOW ALL YOUR WORK)**