

EXAM (2) FORM B

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) $\lim_{h \rightarrow 0} \frac{\cos 5h - 1}{1 - \cos 7h}$
 Similar to 31/2.6 a) $\frac{-5}{7}$ b) $\frac{-7}{5}$ c) $\frac{-49}{25}$ d) $\frac{-25}{49}$ e) 0

2) Given that $f(x) = \sqrt{x+1}$. Find the slope of the tangent line at $a=3$
 13/3.2 a) $\frac{1}{8}$ b) $\frac{1}{5}$ c) $\frac{1}{6}$ d) $\frac{1}{7}$ e) $\frac{1}{4}$

3) If $f(x) = \frac{x+1}{x}$. Then $f''(-1) =$
 45/3.3 a) 0 b) 1 c) -2 d) 2 e) -1

4) If $f(x) = x \sin x - 3 \cos x$. Then $f''\left(\frac{p}{2}\right) =$
 21/3.4 a) 5 b) $\frac{-p}{2}$ c) $\frac{p}{2}$ d) -5 e) p

5) If $f(x) = -2\sqrt{\cos(5x)}$. Then $f'(2p) =$
 23/3.5 a) 2 b) 5 c) -5 d) 0 e) -2

6) Find $\lim_{x \rightarrow 0} (1-4x)^{\frac{2}{x}} =$
 Similar to 57/4.2 a) e^{-8} b) e^8 c) e^2 d) e^{-4} e) e^4

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)

