

Math101 Term181
Sec13 Quiz 4

Name	ID	Sr
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Instruction: CIRCLE one answer and SHOW all your work to get full mark

Q1) If $f(x) = 2^{-(x^2+3x)}$, then $f'(0) =$

a) $3\ln(2)$

b) $-3\ln(2)$

c) 1

d) $\ln(2)$

e) -3

f) 3

Q2) The sum of the x-values for which the graph of the function $f(x) = \frac{\sec x}{1-\tan x}$, $0 \leq x \leq 2\pi$, has a **horizontal** tangent is :

a) $\frac{3}{4}\pi$

b) $\frac{3}{2}\pi$

c) $\frac{5}{2}\pi$

d) $\frac{7}{4}\pi$

e) $-\frac{\pi}{4}$

Q3) If $f(x) = \sin(5x + 4) + (5x + x^3)^{21}$, then $f^{(63)}(0) =$

- a) $-5^{63} \cos(4)$
- b) $-5^{63} \cos(4) + 21!$
- c) $-5^{63} \cos(4) + 63!$
- d) $-5^3 \cos(4) + 63!$
- e) $5^{63} \cos(4) + 63!$
- f) $-5^{63} \sin(4) + 63!$
- g) None of the above

Q4) $\lim_{x \rightarrow 0} \frac{\sin(4x) + \tan(2x) - 2 \cos(x) + 2}{\sin(5x) + \cos(3x) - \tan(4x) - 1} =$

- a) 6
- b) $\frac{4}{5}$
- c) 2
- d) $\frac{1}{2}$
- e) does not exist

Math101 Term181
Sec17 Quiz 4

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Q1) The slope of the normal line to the graph of $y = x^2 \tan\left(\frac{1}{x}\right)$ at $x = \frac{1}{\pi}$, equals

a) $\frac{2}{\pi}$

b) 1

c) 2π

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

e) 0

Q2) $\lim_{t \rightarrow 0} \frac{3 \tan(2t) - 5 \tan(3t)}{7t \cos t + 4 \sin(5t)} =$

a) $-\frac{1}{3}$

b) $\frac{1}{27}$

c) $-\frac{1}{9}$

d) $\frac{5}{27}$

e) $\frac{-8}{9}$

Q3) if $f(x) = \cot\left(\frac{\pi}{4} \sqrt{\cot 2x}\right)$, then $f'\left(\frac{\pi}{8}\right) =$

a) $\frac{\pi}{4}$

b) $\frac{\pi}{2}$

c) $\frac{1}{2}$

d) 4

e) π

Q4) if $f(x) = 2g(3e^x) \cdot \cos x$, $g'(3e) = e$, and $g'(3) = -\frac{1}{2}$.
Then $f'(0) =$

a) -3

b) 3

c) $3e$

d) $6e$

e) -6

Math101 Term181
Sec18 Quiz 4

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Instruction: CIRCLE one answer and SHOW all your work to get full mark

Q1) The slope of the tangent line to the graph of $y = \tan^2(x^2 - \frac{3\pi}{4})$ at $x = \sqrt{\pi}$, equals

a) 4

b) 2

c) $8\sqrt{\pi}$

d) 2π

e) $2\sqrt{\pi}$

Q2) $\lim_{x \rightarrow \pi} \frac{\sin(3\sin x)}{\tan x} =$

a) -1

b) 0

c) -3

d) Does not exist

e) $-\infty$

Q3) the equation of the tangent line to the curve $y = \frac{1}{\cos x + \sin x}$ at $x = 0$ is :

a) $y + x = -1$

b) $y - x = -1$

c) $y - x = 1$

d) $y + x = 1$

e) $y = x$

Q4) $\lim_{x \rightarrow 1} \frac{2^x \sec(2x-2) - 2}{7-7x} =$

a) $2 \ln 2$

b) $-\frac{\ln 4}{7}$

c) 2

d) $\frac{1}{7}$

e) None of the above

Math101 Term181
Sec21 Quiz 4

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Q1) If $f(t) = g(tg(t^2))$ such that

t	2	4	8
$g(t)$	2	4	3
$g'(t)$	1	2	2

Then $f'(2) =$

- a) 40
- b) 32
- c) 48
- d) 2
- e) 8

Q2) the slope of the tangent line to the curve $y = 3\sqrt{x + \sqrt{x^2 + 8}}$ at $x = 1$ is

- a) -3
- b) -1
- c) 1
- d) $\frac{1}{3}$
- e) 6

Q3) If $f(x) = \cos(5x - 3) + (5x + x^2)^{21}$, then $f^{(42)}(0) =$

- a) $5^{42} \cos(3) + 42!$
- b) $25 \cos(3) + 42!$
- c) $\cos(3)$
- d) $-5^{42} \cos(3) + 42!$
- e) $-5^{42} \sin(3) + 42!$
- f) $-5^{42} \sin(3) + 21!$
- g) None of the above

Q4) If $\lim_{x \rightarrow 0} \frac{\sin(4x)}{kx-x} = 2$, where k is a constant, then $k =$

- a) $\frac{4}{5}$
- b) 5
- c) 2
- d) $\frac{3}{2}$
- e) 3