Name: _____

Quiz 9 ♡

MATH 200
September 29, 2021

1. In this problem $y = x\sin(x)$.

   (a) $\dfrac{dy}{dx} =$

   (b) $\dfrac{d^2y}{dx^2} =$

   (c) $\dfrac{d^3y}{dx^3} =$

2. Find the derivative of $y = \tan\left(3x^2 + x\right)$.

3. Find the derivative of $y = \cos\left(\dfrac{1}{x}\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given in the table below. If $h(x) = f\big(g(x)\big)$, find $h'(3)$.

x	0	1	2	3	4	5
$f(x)$	-4	-2	0	1	1	0
$f'(x)$	2	1	1	3	5	-1
$g(x)$	10	9	7	4	0	-4
$g'(x)$	0	-0.5	-1	-3	-4	-4

Name: _____

Quiz 9 ♣

MATH 200
September 29, 2021

1. In this problem $y = xe^x$.

   (a) $\dfrac{dy}{dx} =$

   (b) $\dfrac{d^2y}{dx^2} =$

   (c) $\dfrac{d^3y}{dx^3} =$

2. Find the derivative of $y = \sin\left(\sqrt{x}\right)$.

3. Find the derivative of $y = \tan\left(3x^3 + x\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given in the table below. If $h(x) = f\big(g(x)\big)$, find $h'(4)$.

x	0	1	2	3	4	5
$f(x)$	-4	-2	0	1	1	0
$f'(x)$	2	1	1	3	0.5	-1
$g(x)$	10	9	7	4	0	-4
$g'(x)$	0	-0.5	-1	-3	-4	-4

Name: _____

Quiz 9 ♢

MATH 200
September 29, 2021

1. In this problem $y = \dfrac{2}{x^2}$.

   (a) $\dfrac{dy}{dx} =$

   (b) $\dfrac{d^2y}{dx^2} =$

   (c) $\dfrac{d^3y}{dx^3} =$

2. Find the derivative of $y = \cos\left(xe^x\right)$.

3. Find the derivative of $y = \cot\left(3x^2 + x\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given in the table below. If $h(x) = f\big(g(x)\big)$, find $h'(0)$.

x	0	1	2	3	4	5
$f(x)$	-4	-2	0	1	1	0
$f'(x)$	2	1	1	3	0.5	-1
$g(x)$	5	9	7	4	0	-4
$g'(x)$	3	-0.5	-1	-3	-4	-4

Name: _____

Quiz 9 ♠

MATH 200
September 29, 2021

1. In this problem $y = x^2 + \dfrac{1}{x}$.

   (a) $\dfrac{dy}{dx} =$

   (b) $\dfrac{d^2y}{dx^2} =$

   (c) $\dfrac{d^3y}{dx^3} =$

2. Find the derivative of $y = \sin\left(x^2 e^x\right)$.

3. Find the derivative of $y = \tan\left(\dfrac{1}{x^2}\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given in the table below. If $h(x) = f\big(g(x)\big)$, find $h'(1)$.

x	0	1	2	3	4	5
$f(x)$	-4	-2	0	1	1	0
$f'(x)$	2	1	1	3	6	-1
$g(x)$	10	4	7	4	0	-4
$g'(x)$	0	-0.5	-1	-3	-4	-4