Name: _____

Quiz 9 ♡

MATH 200
October 3, 2022

1. In this problem $y = \cos(3x + 1)$.

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

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

2. Find the derivative of $y = \tan\left(x^3 - 5x^2 + 3\right)$.

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

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given below. Let $h(x) = f\big(g(x)\big)$.

   (a) Find $h'(4)$.

x	1	2	3	4	5	6
$f(x)$	-3	-2	1	5	6	3
$f'(x)$	4	3	2	1	0	-2
$g(x)$	1	1	-2	3	-4	5
$g'(x)$	2	-3	5	-8	10	-15

   (b) Find $h(4)$.

   (c) Find the **equation** of the tangent line to the graph of $y = h(x)$ at $\big(4, h(4)\big)$.

Name: _____

Quiz 9 ♣

MATH 200
October 3, 2022

1. In this problem $y = \sin\left(x^2\right)$.

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

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

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

3. Find the derivative of $y = \tan\left(x^3 - 5x^2 + 3\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given below. Let $h(x) = f\big(g(x)\big)$.

   (a) Find $h'(2)$.

x	1	2	3	4	5	6
$f(x)$	-3	-2	1	5	6	3
$f'(x)$	4	3	2	1	0	-2
$g(x)$	1	1	-2	3	-4	5
$g'(x)$	2	-3	5	-8	10	-15

   (b) Find $h(2)$.

   (c) Find the **equation** of the tangent line to the graph of $y = h(x)$ at $\big(2, h(2)\big)$.

Name: _____

Quiz 9 ♢

MATH 200
October 3, 2022

1. In this problem $y = \cos(2x + 1)$.

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

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

2. Find the derivative of $y = \sin\left(x^5 - x + 5\right)$.

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

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given below. Let $h(x) = f\big(g(x)\big)$.

   (a) Find $h'(6)$.

x	1	2	3	4	5	6
$f(x)$	-3	-2	1	5	6	3
$f'(x)$	4	3	2	1	-1	-2
$g(x)$	1	1	-2	3	-4	5
$g'(x)$	2	-3	5	-8	10	-15

   (b) Find $h(6)$.

   (c) Find the **equation** of the tangent line to the graph of $y = h(x)$ at $\big(6, h(6)\big)$.

Name: _____

Quiz 9 ♠

MATH 200
October 3, 2022

1. In this problem $y = \cos\left(x^2\right)$.

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

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

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

3. Find the derivative of $y = \sin\left(x^3 - 5x^2 + 3\right)$.

4. Information about functions $f(x)$, $g(x)$ and their derivatives is given below. Let $h(x) = f\big(g(x)\big)$.

   (a) Find $h'(1)$.

x	1	2	3	4	5	6
$f(x)$	-3	-2	1	5	6	3
$f'(x)$	4	3	2	1	0	-2
$g(x)$	1	1	-2	3	-4	5
$g'(x)$	2	-3	5	-8	10	-15

   (b) Find $h(1)$.

   (c) Find the **equation** of the tangent line to the graph of $y = h(x)$ at $\big(1, h(1)\big)$.