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Math 151
Oct. 1, 2019
Quiz #2A

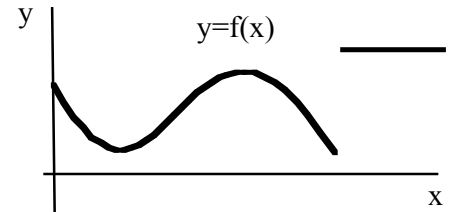
Name _____
(please print)

1. $g(x)$ is a continuous function _____>

- (3) (a) $g(x) = 0$ at least _____ times
(b) $g(x) = 3$ at least _____ times
(c) $g(x) = -1$ at least _____ times

x	0	1	2	3	4	5
g(x)	2	5	-2	3	1	-3

2. (a) **Define** $f'(x) =$
(2) (the **definition**)
(2) (b) What does $f'(x)$ measure? (just give one)



3. The graph of $y=f(x)$ is shown. ----->

On the lower axes graph $y = \{\text{slope of } f(x)\}$

(3)

4.
$$g(x) = \begin{cases} x + K & \text{if } x \leq 3 \\ x^2 + 2 & \text{if } 3 < x \end{cases}$$

What value of K will make $g(x)$ continuous at $x=3$? $K =$ _____

(1)

5. (a) $f(x) = x^2 + 3x + 1$. Evaluate and simplify (no limit) $\frac{f(2+c) - f(2)}{c} =$ _____

(3)

6. What is the equation of the line tangent to the graph of

$f(x) = x^3 - 2x + 1$ when $x = 2$?

$y =$ _____

(4)

7. $f(x) = 5x^2 - 3x + 7$. At what value of x is $f'(x) = 2$? $x =$ _____

(1)

$$D\left(3x + \frac{2}{x}\right) =$$

(1)

8. If the units of x are fish and the units of $f(x)$ are trees, then the units of $f'(x)$ are _____

(1)

Bonus (+1 if correct) Name one project or field of mathematics that John von Neumann worked in. _____