

QUIZ 2 - MATH 111

Friday, February 2

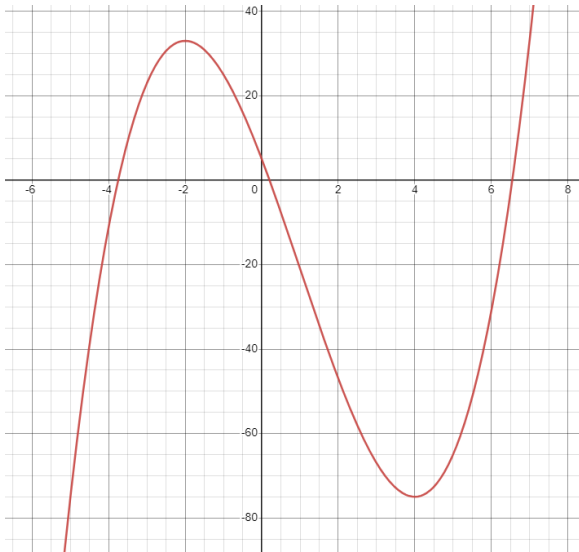
YOUR NAME: _____

George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [4 points] Find the average rate of change of the function $f(x) = x^2 + \sqrt{x-1}$ over the interval $[5, 10]$.

2. [4 points] Find the intervals over which the following function is increasing and give its relative maxima and relative minima.



3. [4 points] Consider the functions $f(x) = \frac{1}{7x + 10}$, $g(x) = 2x - 5$ and $h(x)$ specified by the table

| | | | | | |
|--------|-----|---|---|----|---|
| x | 0 | 1 | 2 | 3 | 4 |
| $h(x)$ | -10 | 3 | 7 | -9 | 1 |

Calculate the following, showing all steps, and simplify, if possible.

$$g(h(3)) =$$

$$(f \circ g)(x) =$$