You have 20 minutes to take this quiz. Each problem will be graded for clarity of work as well as correctness, so show all work **clearly and in order**. Circle or otherwise indicate your final answers. Please note that there are problems on both the front and the back of this page.

1. (*6 points*) **[Similar to #41, 3.3]**

Find $\dfrac{d^4}{dx^4}[3x - x^4]$.

2. (*6 points*) **[Similar to #35, 3.5]**

Given that:

$$f(0) = 1 \qquad g(0) = 2 \qquad f(1) = 0 \qquad g(1) = 1$$
$$f'(0) = 2 \qquad g'(0) = 1 \qquad f'(1) = 1 \qquad g'(1) = 1$$

Evaluate $(g \circ f)'(1)$.

Turn over for more...

3. (*8 points*) [**Similar to #42, 3.4**]

Suppose that as an object moves along the x-axis, its position at each time $t \geq 0$ is given by $x(t) = t^3 - 6t^2 - 15t$. Determine the time interval(s), if any, during which the object is moving right and slowing down. Show and explain your work clearly and in order if you want to get any points.