

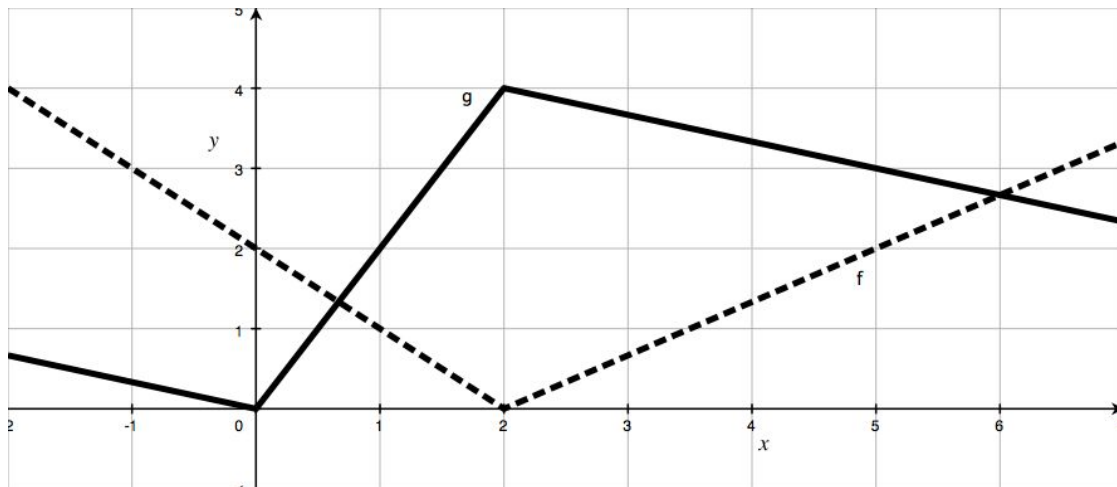
Quiz 3

Math 251

Name:

Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

1. [2] Let $u(x) = 2f(x) - g(x)$ and $v(x) = f(x)/g(x)$ where the graphs of f and g are given below.



Find the following:

$$u'(1)$$

$$v'(5)$$

2. [3] Let $f(x) = 2xe^x$. Find the equation of the tangent line to the graph of f when $x = 0$.

3. [5] *Prove* the following using only the definition of a derivative and limit properties. Clearly explain each of your steps.

If c is a real number and f is a differentiable function for all x , then

$$\frac{d}{dx}(cf(x)) = c\frac{d}{dx}f(x)$$

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