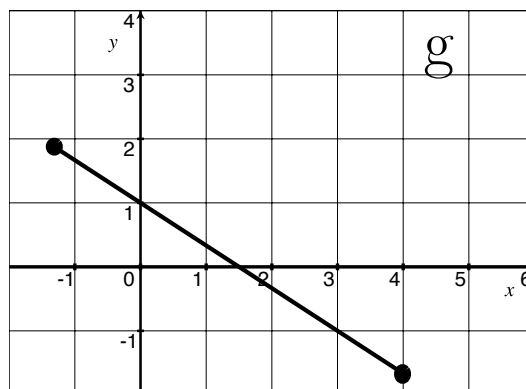
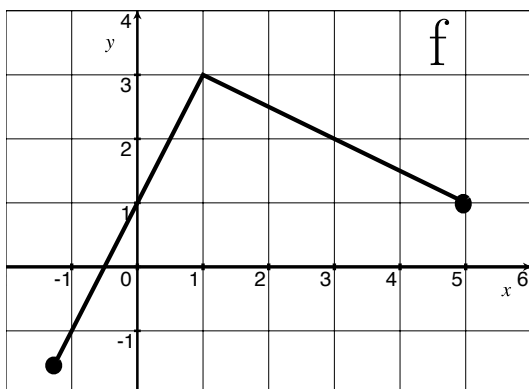


TMATH 124 Quiz 3

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. Supporting work is needed to earn credit. There are two sides of this quiz.

1. [4] (Products Activity #1 & §3.4 #164) Let f be the function graphed on the left and g be the function graphed on the right.

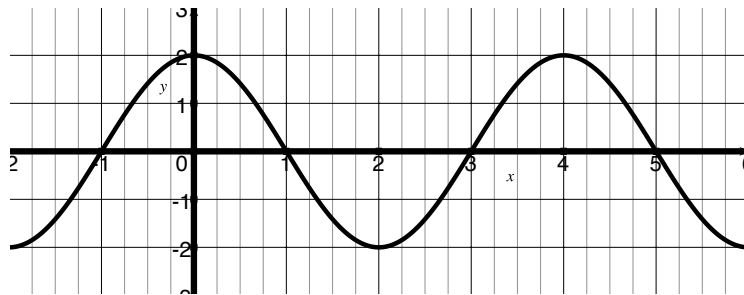


Estimate the following (if possible):

(a) $(f \cdot g)'(3)$

(b) $\frac{d}{dx}(f(g(x)))|_3$

2. [3] (WebHW8 #13) Let $\alpha(x) = 2 \cos\left(\frac{\pi x}{2}\right)$. Find the equation for the line tangent to α when $x = \frac{1}{3}$.



3. [3] (Chain Activity #3) Consider $\beta(x) = \frac{\sqrt{4x^3 - 5x + 2}}{\ln(x)}$. Indicate the steps you would use to find $\beta'(x)$ (e.g. product rule where f =this and g =that, or chain rule where f =this thing and g = that thing). You do *not* need to find $\beta'(x)$ but you do need to:
- (a) indicate all the derivative rules you would use and
 - (b) indicate the f and g used in each rule.