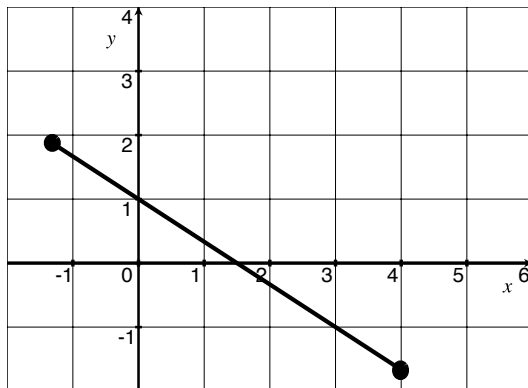
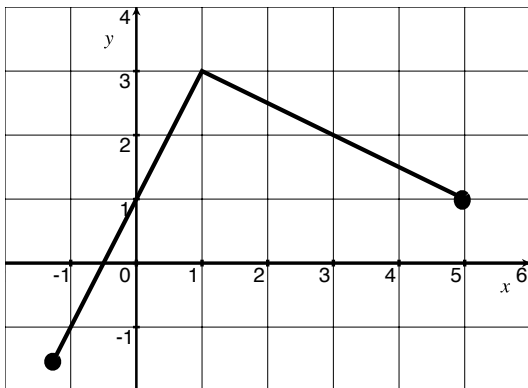


# Derivatives of Product, Quotient, & Trig.

1. Let  $f$  be the function graphed on the left and  $g$  be the function graphed on the right.



Find the following (if possible):

$$(f \cdot g)'(-1)$$

$$\frac{d}{dx}(fg)|_{x=0}$$

$$(fg)'(1)$$

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

2. Find:

$$\frac{d}{dx} \left( \frac{e^x}{x} \right)$$

$$\frac{d}{dx} (ex^2)$$

3. Find:

$$\frac{d}{dx} \left( \frac{e^x}{3x+2} \right)$$

$$\frac{d}{dx} ((7x^2 - 2)(e^x + 4x^3)^{-1})$$

4. Find the equation of the line that is tangent to the graph of  $y = e^x x$  when  $x = 0$ .

5. Find an equation of the tangent line to the curve  $y = \frac{e^x}{1+x^2}$  at the point  $(1, \frac{1}{2}e)$ .