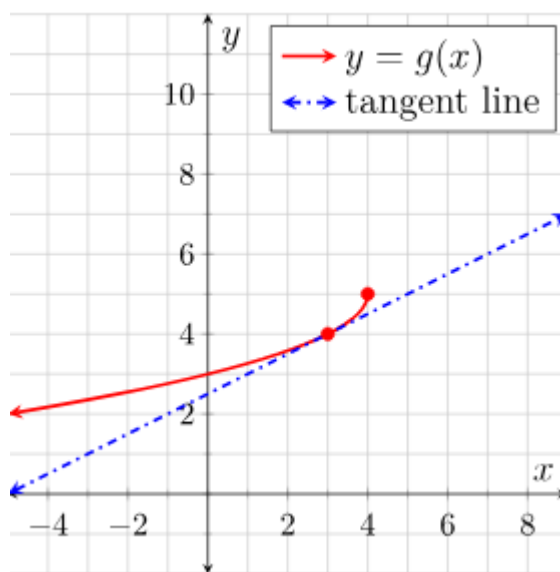


**MTH 251**  
**LAB §2.6**

DAMIEN ADAMS

1. An object is tossed into the air so that its elevation  $p$ , measured in meters, is given by the function  $p(t) = 300 + 10t - 4.9t^2$ , where  $t$  is the number of seconds that has passed since the object was tossed.
  - a. Evaluate  $\lim_{h \rightarrow 0} \frac{p(4+h) - p(4)}{h}$ .
  - b. What is the unit for the quantity you computed in part a?
2. Let  $g(x) = 5 - \sqrt{4-x}$ . The graph of  $y = g(x)$  provided below.



- a. Find the slope of the tangent line by looking at the  $\frac{\text{Rise}}{\text{Run}}$  on the graph.
  - b. Find the slope of the tangent line by computing  $m = \lim_{h \rightarrow 0} \frac{g(3+h) - g(3)}{h}$ .
  - c. What is an equation of the line tangent to  $g$  at  $x = 3$ ?
3. Find the derivative of the function  $f(x) = \frac{3}{2-x}$  at the number  $a = -1$ .
  4. Find an equation of the line tangent to the function  $f(x) = \frac{3}{2-x}$  at the point  $(-1, 1)$ .