

Example 1. The height of a thrown ball is given by the following function:

$$p(t) = -4.9t^2 + 3.5t + 2$$

where t is in seconds and p is in meters. Find an approximation of the velocity at $t = 2.3$.

Example 2. The quantity of a drug in the blood is given by $Q = 500(0.9)^t$, with Q in mg and t in hours. Estimate the rate of change of the quantity of drug at time $t = 1.5$.

Proof.

□

Example 3. Using the graph of $f(x)$ shown below, estimate $f'(-2)$ and $f'(1)$. (Hint: the best way to do this is to draw a tangent line at the point, extend it either as long as possible, or until it hits a point on the grid that has a clear value. Calculate the slope of the tangent line using either points at/near the end of the line, or points with a clear value on the grid.)

