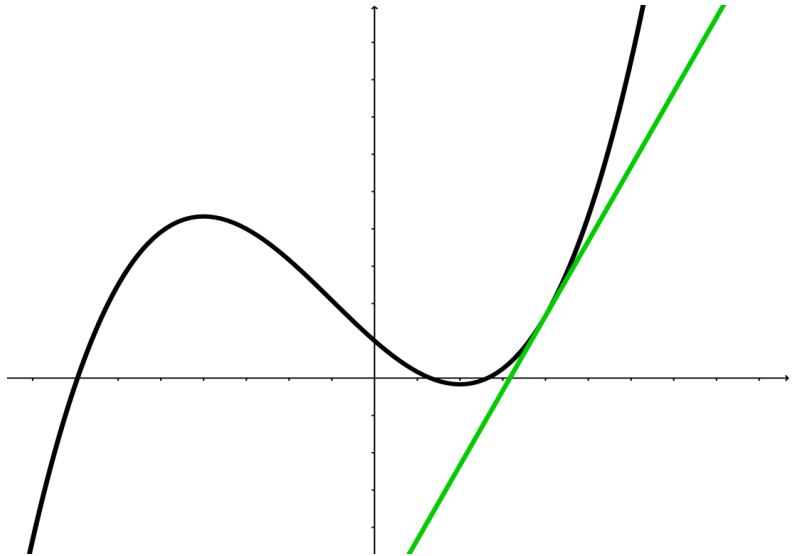


Recall: The derivative $f'(a)$ can be interpreted as the slope of line tangent to $f(x)$ at $x = a$

Goal: Find an equation of the line tangent to $y = f(x)$ at $x = a$

Solution:



An equation of the line tangent to $y = f(x)$ at $x = a$ is:

$$y =$$

Example: Suppose that we run a car dealership and our cost to sell 15 cars is \$200,000 and the derivative $C'(15) = 10000$:

$$C(15) =$$

$$C'(15) =$$

Estimate the cost to sell 17 cars.

Recall: We studied the idea of relative change by looking at comparing the change in populations to Williamsburg, MA vs. NYC.

Relative Change =

Just like with change, it is sometimes important to compare the rate of change to the original amount.

Relative rate of Change =

Example: Find the Relative Rate of Change for

$$y = 2^x ; \text{ at } x = 1$$