		Day : Day
	Author 1	$1 \square \square$
	Author 2	
	Author 3	
Group Work 05	Author 4	

- **1.** Suppose that the graph of y = f(x) is given below. Let a be an arbitrary number.
 - Label the points (a, f(a)) and (x, f(x)) on the graph on the left.
 - Draw the line through the points (a, f(a)) and (x, f(x)) on the graph on the left.
 - Write an equation for the slope of this line underneath it.
 - Label the points (a, f(a)) and (a + h, f(a + h)) on the graph on the **right**.
 - Draw the line through the points (a, f(a)) and (a + h, f(a + h)) on the graph on the **right**.
 - Write an equation for the slope of this line underneath it.



2. On **both** of the graphs above (in part 1), draw the tangent line to the curve y = f(x) when x = a.

3. The graph of the curve $y = \frac{1}{x}$ is below. Draw the tangent line to the curve $y = \frac{1}{x}$ at the point $(2, \frac{1}{2})$, and find an equation for the tangent line to the curve $y = \frac{1}{x}$ at the point $(2, \frac{1}{2})$.



4. Suppose an object is dropped from a bridge, and its height in feet after t seconds is given by

$$s(t) = -16t^2 + 1600.$$

- (a) How tall is the bridge?
- (b) With what velocity will the ball hit the ground?