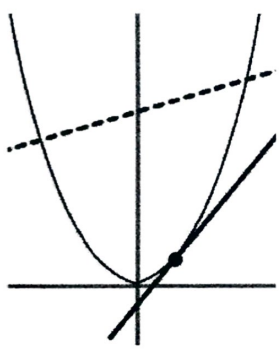


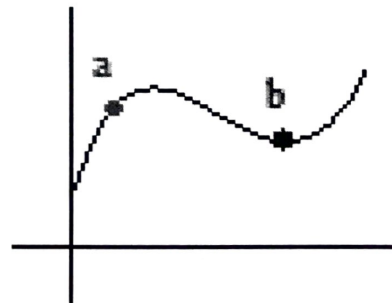
# Worksheet #1 | MathScoop

- 1) The line connecting two points  $(a, f(a))$  and  $(b, f(b))$  on a curve is known as the \_\_\_\_\_ line.
- 2) As "b" approaches "a", the slope of the secant line approaches the slope of the \_\_\_\_\_ line.
- 3) The derivative of a function also known as the \_\_\_\_\_ and the \_\_\_\_\_
- 4) The slope of the secant line tells you the \_\_\_\_\_ rate of change and the slope of the tangent line tells you the \_\_\_\_\_ rate of change.

5)

|   |  |
|---|--|
| <p>Insert a picture of a graph with a tangent and a secant line</p>  | <p>The tangent line is the _____ line</p> <p>The secant line is the _____ line</p> |
|---|--|

- 6) Sketch the secant line between the point a and point b. On the same graph below sketch the tangent line at point a.



# Worksheet #1 | MathScoop

7) Find the average rate of change between the points  $(-1,6)$  and  $(5,3)$

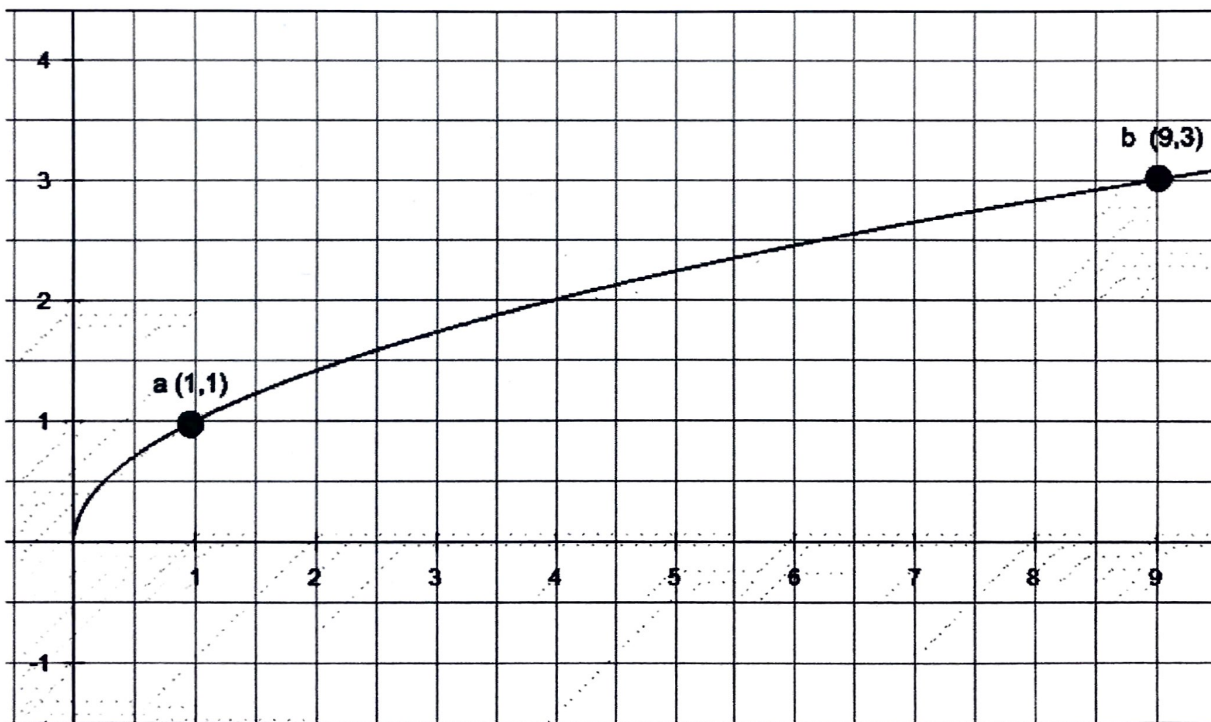
8)

a) Find the equation of the secant line between point a and point b in the graph below.

Slope:

Equation:

Sketch the secant line on the graph



## Worksheet #1 | MathScoop

9) Sketch the graph of  $f(x) = (x - 1)^2 + 2$ .

| $f(x) = (x - 1)^2 + 2$ | Plot the point $x = -1$ and label it "a"<br>Plot the point $x = 1$ and label it "b"  |
|------------------------|--|
|                        | a) Find the equation of the secant line between points "a" and points "b"<br><br>Slope:<br><br>Equation:<br><br>b) Sketch the secant line on the graph |

10) Given function  $y = x^3$ , and the point  $(-1, -1)$ . Starting with the given point which x-value will produce a secant line with the greatest rate of change.

a)  $x = 1$

b)  $x = 0$

c)  $x = -2$

d)  $x = 2$