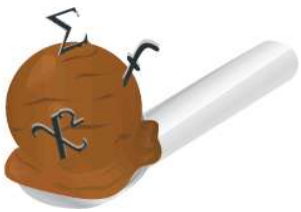


What is a Derivative?

Worksheet with Answer Key

Relevant urls:

1) What is Derivative? www.mathscoop.com/calculus/derivatives/what-is-a-derivative.php

2) Derivatives : www.mathscoop.com/calculus/derivatives/

3) What is Calculus? www.mathscoop.com/calculus/what-is-calculus.php

More Worksheets can be found at

www.mathscoop.com/worksheets/

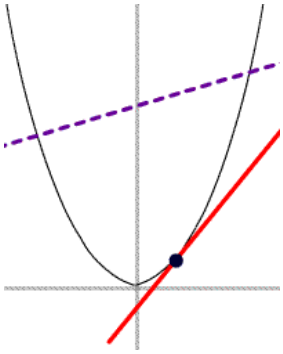
1) The line connecting two points (a, f(a)) and (b, f(b)) on a curve is known as the _____ line.

2) As "b" approaches "a", the slope of the secant line approaches the slope of the _____ line.

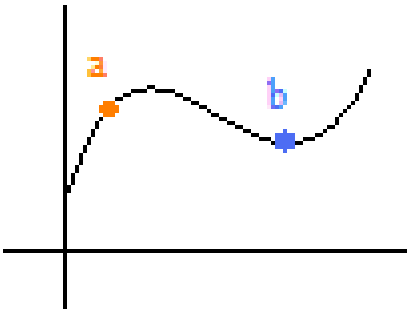
3) The derivative of a function also known as the _____ and the _____

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)

Insert a picture of a graph with a tangent and a secant line 	The tangent line is the _____ line The secant line is the _____ line

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



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

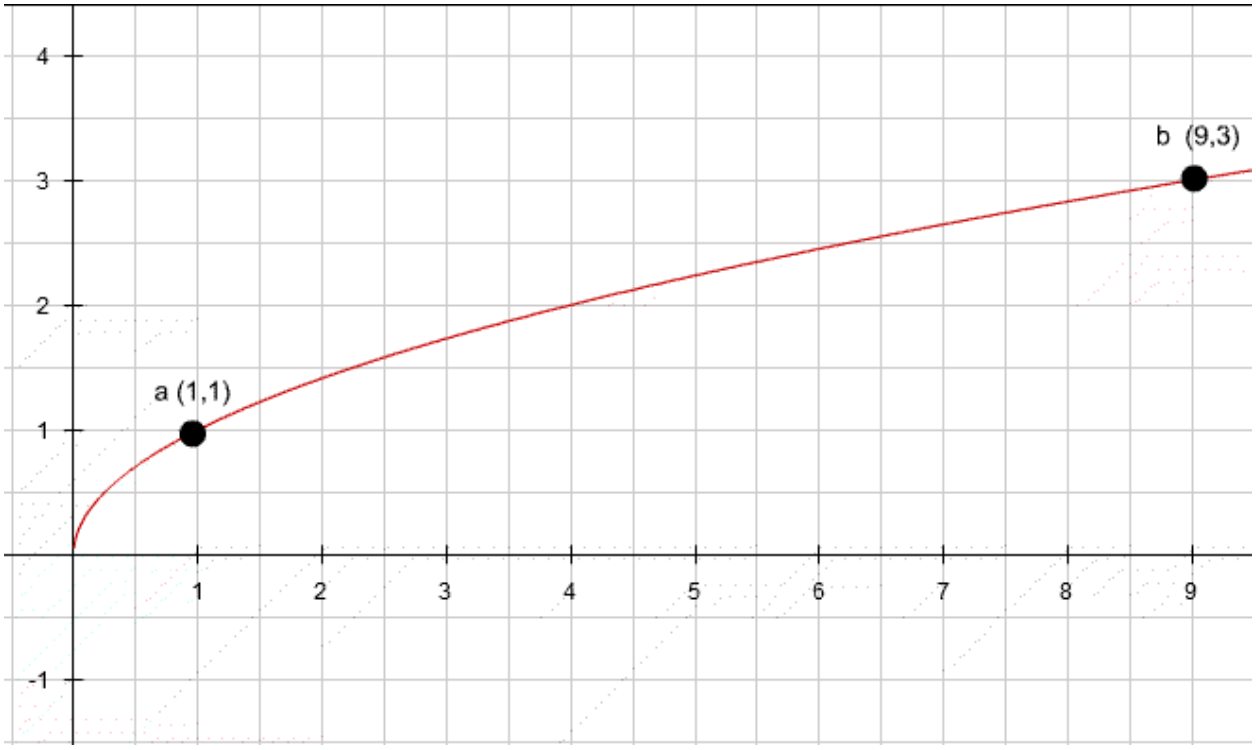
8)

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



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" Plot the point x= 1 and label it "b"
	a) Find the equation of the secant line between points "a" and points "b" Slope: Equation: 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