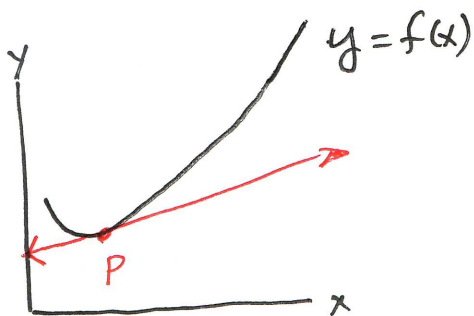


What is Calculus?

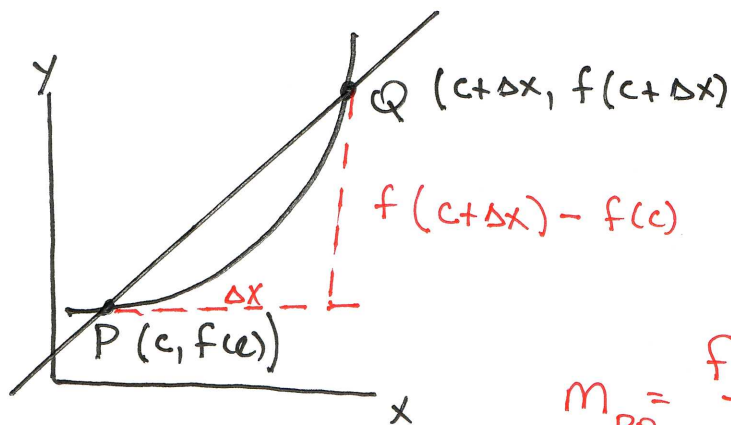
Calculus is the mathematics of change, tangent lines, slopes, areas, volumes, arc lengths, centroids, curvatures, and a variety of other concepts that enable people to model real-life situations.

The Tangent Line Problem



We investigate the slope along $f(x)$ from both directions toward point P by use of limits.

Consider the following:



$$m_{PQ} = \frac{f(c+\Delta x) - f(c)}{c+\Delta x - c} = \frac{f(c+\Delta x) - f(c)}{\Delta x}$$

Secant line PQ
where the horizontal
change = Δx and the
vertical change =
 $f(c+\Delta x) - f(c)$

