

DEFINITION OF INSTANTANEOUS RATE OF CHANGE

(§2.4)

Graphically: The instantaneous rate of change at a point is the slope of the line *tangent* to the curve at the point you are interested in.

Algebraically: Instantaneous Rate of Change at $x = a$ is

$$\lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h}.$$

♪: Once we start chapter 3, the instantaneous rate of change will also be known as the *derivative of the function at $x = a$* . Also, whenever you see "rate of change" it is assumed we mean the *instantaneous* rate of change unless the "average rate of change" is specifically mentioned.