Math 141 - Calculus Section 3.1 Video Worksheet Name_____

Tangents at a point

Tangents and derivative at a point

DEFINITIONS – The slope of the curve y = f(x) at the point $P(x_0, f(x_0))$ is the number

DEFINITION – The derivative of a function f at a point X₀, denoted $f'(x_0)$, is

The following are all interpretations for the limit of the difference quotient,

Examples

$$y = 4 - x^2$$
 (-1,3)

$$y = \frac{1}{x - 1} \qquad x = 3$$

Try It: $y = x - 2x^2$ (1,-1)