

Lecture 16

Monday, September 30, 2024 7:14 AM

Viewing a as a number that can take different values, you are viewing the derivative as a function, not just a number. We only need to alter the notation slightly:

$$f'(x) = \lim_{t \rightarrow x} \frac{f(t) - f(x)}{t - x} = \lim_{h \rightarrow 0} \frac{f(x + h) - f(x)}{h}$$

$f'(x) > 0$ when f is increasing around x .

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$f'(x) = 0$ when f has a horizontal tangent line at x .

Work on the worksheet

The motion problem...

Finding $f'(x)$ where $f(x) = x^3$ is possible, although a little bit painful.

Another method to find derivatives: using algebraic rules.

Sum law, product law, quotient law

Start with polynomials: $f(x) = x^n$