

1. Slope = $\frac{\text{Rise}}{\text{Run}} = \frac{y_2 - y_1}{x_2 - x_1}$
2. Slope = Average Rate of Change
3. Derivative = Instantaneous Rate of Change at a Point = Slope of the Tangent Line at the Point

How to Find a Derivative

Four-Steps:

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|---------|---|
| Step 1. | Find $f(x + h)$ |
| Step 2. | Find $f(x + h) - f(x)$ |
| Step 3. | Find $\frac{f(x + h) - f(x)}{h}$ |
| Step 4. | Find $\lim_{h \rightarrow 0} \frac{f(x + h) - f(x)}{h}$ |

There are many symbols that mean “derivative”. Here are the most common ones: $f'(x)$, y' , $\frac{dy}{dx}$, $\frac{d}{dx} f(x)$

When is there NOT a derivative?

- 1.
- 2.
- 3.