

2-2 Basic Differentiation Rules

The Constant Rule

$$\frac{d}{dx}[c] = 0$$

i.e. The derivative of a constant function is 0.
Explain why this makes sense from a graphing perspective.

The Power Rule

If n is a rational number, then the function $f(x) = x^n$ is differentiable and

The Constant Multiple Rule

If f is a differentiable function and c is a real number, then cf is also differentiable and

$$\frac{d}{dx}[cf(x)] = cf'(x)$$

The sum and difference rule

Ex: $f(x) = 2x^2 + 3x^{3/2} - 7 + \frac{1}{x}$

If $f(x) = \sin x$, then $f'(x) =$

If $f(x) = \cos x$, then $f'(x) =$

If $f(x) = e^x$, then $f'(x) =$

We will derive the remaining trig functions, encounter logarithmic functions and other exponential functions at a later time.

Find a point where the tangent line is horizontal - Homework Preview