

L24

$$\frac{d}{dx} x^n = n x^{n-1}$$

$$\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = \frac{(x+h)^3 - x^3}{h}$$

FIND $\frac{dy}{dx}$

Ex A

$$y = x^3$$

$$\frac{dy}{dx} = 3x^2$$

$$\textcircled{B} y = \sqrt[3]{x}$$

$$y = x^{1/3}$$

$$\frac{dy}{dx} = \frac{1}{3} x^{-2/3}$$

$$\textcircled{C} y = \frac{1}{t^3}$$

$$y = t^{-3}$$

$$\frac{dy}{dt} = -3t^{-4}$$

$$\textcircled{D} y = \sqrt[4]{x^3}$$

$$y = x^{3/4}$$

$$\frac{dy}{dx} = \frac{3}{4} x^{-1/4}$$

$$\textcircled{E} y = \frac{1}{x^2} x^{-2}$$

$$\frac{dy}{dx} = -2x^{-3}$$