

Turunan 18 :

No. :

$$\frac{d}{dx} (x^3 + y^3 = x^3 y^3)$$

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

$$\rightarrow \frac{dy}{dx} (3y^2 - 3y^2 x^3) = 3x^2 y^3 - 3x^2$$

$$\text{maka } \frac{dy}{dx} = \frac{3x^2(y^3 - 1)}{3y^2(1 - x^3)} = \frac{x^2(y^3 - 1)}{y^2(1 - x^3)}$$

Integral 19 :

$$\int_1^3 x \sqrt{x^2 + 1} dx$$

$$\text{misal } x^2 + 1 = t^2$$

$$2x dx = 2t dt \rightarrow x dx = t dt$$

$$\text{maka } \frac{1}{2} \int_{\sqrt{2}}^{\sqrt{10}} 2t \cdot 2 dt = \int_{\sqrt{2}}^{\sqrt{10}} t^2 dt = \left. \frac{1}{3} t^3 \right|_{\sqrt{2}}^{\sqrt{10}}$$

$$= \frac{1}{3} (10\sqrt{10} - 2\sqrt{2})$$

Integral 7 :

$$\int d \tan(5x+1) = \tan(5x+1) + C$$