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Bagaimanakah ide kalian untuk menentukan fungsi $M(x,y)$ sedemikian sehingga PD berikut merupakan PD Eksak

$$M(x,y) dx + (2x^2y^3 + x^4y) dy = 0$$

Jawab :

PD eksak jika

$$\frac{\partial M}{\partial y}(x,y) = \frac{\partial N}{\partial x}(x,y)$$

$$N(x,y) = 2x^2y^3 + x^4y$$

$$\frac{\partial N}{\partial x}(x,y) = 4xy^3 + 4x^3y$$

$$\frac{\partial M}{\partial y}(x,y) = 4xy^3 + 4x^3y$$

$$M(x,y) = \int 4xy^3 + 4x^3y$$

$$M(x,y) = xy^4 + 2x^3y^2$$

Jadi fungsi $M(x,y) = xy^4 + 2x^3y^2$