

No.:

Date.:

Bagaimana ide kalian untuk menentukan fungsi $M(x,y)$ sedemikian

sehingga PD berikut merupakan PD eksak:

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

PD tersebut akan menjadi PD eksak jika

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

$$\frac{\partial M(x,y)}{\partial y} = \frac{\partial (2x^2y^3 + x^4y)}{\partial x}$$

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

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

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

$$\text{Jadi, fungsi } M(x,y) = xy^4 + 2x^3y^2 + \phi(y)$$