

Nama: Nabil Ahmad

NIM: 183 05 141 037

Kelas: Matematika B 2018

Ide untuk menentukan $M(x,y)$ sedemikian sehingga
 $M(x,y)dx + (2x^2y^3 + x^4y)dy = 0$ merupakan PD eksak

$$2x^2y^3 + x^4y = N(x,y) \text{ diturunkan terhadap } x$$

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

Karena $M(x,y)dx + (2x^2y^3 + x^4y)dy = 0$ merupakan PD eksak
maka

$$\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$$

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

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

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

$$M = xy^4 + 2x^3y^2$$

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