No.		
Date		
Mama: Mida Mafilah	Andresnamen Assent	
HPM : 2013022059	121 WART REINS TWO-	
Prodi : Pendidikan Fisika A		
Mata Kuliah : Kelistrikan dan Kemagnetan	1-22-22/] u - 8t	
	PIPOLISE DING RESIDE	
Problem 1.11 (halaman 15)	7 0: B1 - 40-12	
	0 - 0 2 4 68 - 72	
7 Find the gradien of the following functions:		
a) $f(x,y,2) = x^2 + y^3 + 24$	on againment appoint	
$(b.) f(x, y, z) = x^2 y^3 z^4$	RIBER MAR # HOL	
c) f(x,y,z) = ex sin(y) ln(z)		
	management who we the	
-) Solution (excle shop (excle) (		
a) f(x,y,2) = x2 + y3 + 29	(1-) (1 . (2 . 2 . ) . (2 (-1)	
$-0 \vec{\nabla} f = 2 \times \hat{i} + 3 y^2 \hat{j} + 4 2 \hat{k}$		
	nunnmanness, mai	
b.) $f(x,y,2) = x^2y^324$		
	mount myounder (a	
containing 2 Padla aran manakan kumiringan serekrami	A summer can a moto	
c.) $f(x,y,2) = e^{x} \sin(y) \ln(2)$	\$ 91100 COS 810.0 16	
$\sim \sqrt{2} = e^{\times} \sin(9) \ln(2) + e^{\times} \cos(9) \ln(2) + e^{\times} \sin(9) (\frac{1}{2}) \hat{k}$		
([+1-)000-01218038-53+1(8)-8-51301-1167		
Problem 1-12	a Bross : labi	
) The height of a certain hill (in feet) is given by	El-1 meldori	
$h(x,y) = 10(2xy - 3x^2 - 4y^2 - 18x + 28y + 12)$		
Where y 15 distance (in miles) north, x the distance east of	South Hadley	
a.) Where is the top of the hill located?	481 han 2(2 (8.2)	
b.) How high is the hill	Transfer to the	
e) How steep is the slope (in feet per mile) at a point I mile	north and one mile	
east of South Hadley? In What direction is the slope s	teepest, at that point?	
·) Salution	. Protestice (	
a) Di manakah, puncak bukit tersebut berada?	Willy Street	
Tentukan fungsi gradien terlebih dahulu		
$\vec{\nabla}_{6} = 10 \left[ (2y - 6x - 18) \hat{i} + (2x - 8y + 28) \hat{j} \right]$	Tex intent de la	
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	PAPERLINE	

Untuk menentukan puncak bukit, gunakan syarat \$76 = 0 (puncak bukit merupakan salah satu jenis stationer):

Tb = 10 [(2y-6x-18)î + (2x-8y+28)j] = 0 menghasilkan sistem persamaan linear dua peuban

2y-6x-18=0 7 Solusi dari sistem persamaan in = (x,y)=(-2,3)2x-8y+28=0 5

Dengan demikian puncak bukit tersebut berada pada 2 km sebelah barat dan 3 km utara Bandung.

b.) Berapa ketinggian bukit tersebut?

~ Subtitusikan (x,y) = (-2,3) pada b(x,y).

b(-2,3) = 10 (-12-12-36+36+84+12) = 720 Km

Jadi, ketinggiannya adalah 720 m

c.) Seberapa curam kemiringan (dalam satuan m/km) pada sebuah titik 1 km utara dan 1 km timur kota Bandung? Pada arah manakah kemiringan tercuram di titik tersebut?

~ Subtitusikan (x,y) = (1,1) pada 76.

 $\vec{\nabla}b(1,1) = 10[(2-6-18)^2 + (2-8+28)^3] = 220(-1+3)$ 

| | 1 | = 220 √2 ≈ 311 m/km, arahnya ke barat laut (135° dari sumbu x positif)

(11+ NBI + XEI-FNF - FX - (NI) DI = (N X ) U

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Problem 1-13

The be the separation vektor from a fixed point (x', v', z') to the point (x, y, z), and let the be its length. Show that

a.) V (H2) . 2H

b) T('/H)=-R/M2

c.) What is the general formula for  $\sigma(\mathcal{H}^n)$ ?

.) Solution

(x0, 40, 20)

 $(x_1y_1, 2) \vec{H} = (x - x_0)^2 + (y - y_0)^2 + (2 - 2_0)^2$   $\vec{H} = \sqrt{(x - x_0)^2 + (y - y_0)^2 + (2 - 2_0)^2}$   $\vec{H}^2 = (x - x_0)^2 + (y - y_0)^2 + (2 - 2_0)^2$ 



	No.  Date:
	a) $\sqrt{\chi_1} = \frac{9}{9} \left[ (x-x_0)_5 + (\lambda-\lambda_0)_5 + (\lambda-\lambda_0)_5 \right] + \frac{9}{9} \left[ (x-x_0)_5 + (\lambda-\lambda_0)_5 + (\lambda-\lambda_0)_5 \right] $
	$\frac{1}{3^{\frac{1}{2}}} \left[ (x - x_0)^2 + (y - y_0)^2 + (z - z_0) \right] \hat{F}$
+	= $2(x-x_0)i + 2(y-y_0)j + 2(z-z_0)k = 2\pi (terbukti)$
	$\frac{\partial}{\partial x} (N^n) = n_2^{n-1} \frac{\partial}{\partial x} = n_2^{n-1} \left( \frac{1}{2} \frac{1}{x} \frac{2}{x} \right) = n_2^{n-1} ix, (Mx = X - X_0)$
-	
	$\frac{\partial}{\partial y} \left( \mathcal{N}^n \right) = \Omega_2^{n-1} i y$ , $\frac{\partial}{\partial z} \left( 2n \right) = \Omega_2^{n-1} i z$ , schingga $\frac{\partial}{\partial z} \left( \mathcal{N}^n \right) = n n^{n-1} k$ .
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