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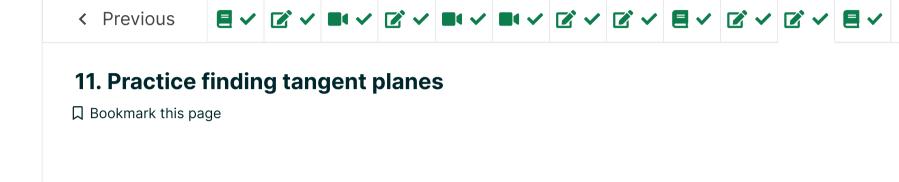


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Lecture due Aug 4, 2021 20:30 IST Completed



Practice

Practice 1

1.0/1 point (graded)

Find the equation for the tangent plane to the surface defined by the function $f(x,y) = \cos(x)\sin(y)$ at the point $(0,\pi)$.

Express the tangent plane as a function of \boldsymbol{x} and \boldsymbol{y} .

? INPUT HELP

Solution:

$$egin{array}{lll} f\left(0,\pi
ight) &=& 0 \ f_x\left(x,y
ight) &=& -\sin\left(x
ight)\sin\left(y
ight), & f_x\left(0,\pi
ight) &=& 0 \ f_y\left(x,y
ight) &=& \cos\left(x
ight)\cos\left(y
ight), & f_y\left(0,\pi
ight) &=& -1 \end{array}$$

Using the data we computed, we write the equation for the tangent plane as

$$z=0-0x-1\left(y-\pi\right) =\pi-y.$$

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You have used 1 of 7 attempts

1 Answers are displayed within the problem

Practice 2

1.0/1 point (graded

Find the equation for the tangent plane to the surface defined by the function $g(x,y)=x^3-y^3+xy$ at the point (1,2).

Express the tangent plane as a function of Δx and Δy . (Type Deltax for Δx , and Deltay for Δy .)

$$z = \begin{bmatrix} -5+5*Deltax-11*Deltay \end{bmatrix}$$
 \checkmark Answer: -5 + 5*Deltax - 11*Deltay

? INPUT HELP

Solution:

$$egin{array}{lll} g\left(1,2
ight) &=& -5 \ g_{x}\left(x,y
ight) &=& 3x^{2}+y, & g_{x}\left(1,2
ight) =5 \ g_{y}\left(x,y
ight) &=& -3y^{2}+x, & g_{y}\left(1,2
ight) =-11 \end{array}$$

Using the data we computed, we write the equation for the tangent plane as







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You have used 1 of 7 attempts

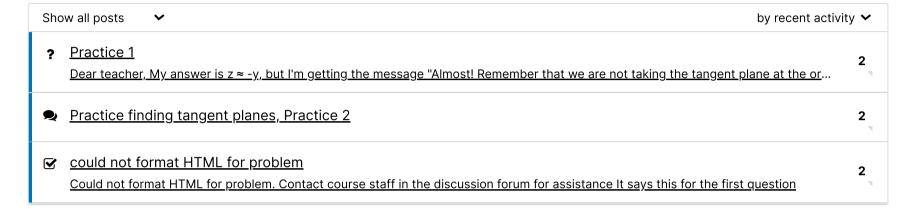
1 Answers are displayed within the problem

11. Practice finding tangent planes

Topic: Unit 1: Functions of two variables / 11. Practice finding tangent planes

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