Calculating the Jacobian

5/5 points (100%)

Practice Quiz, 5 questions

✓ Congratulations! You passed!

Next Item



1/1 points

1.

In this quiz you will put into practice how to calculate the Jacobian from the lecture video.

For $f(x,y)=x^2y+rac{3}{4}xy+10$, calculate the Jacobian row vector J.

$$J = [xy + \frac{3}{4}y, x^2 + \frac{3}{4}xy]$$

$$J = [xy + rac{3}{4}y + 10, x^2 + rac{3}{4}xy + 10]$$

$$J = [2xy + rac{3}{4}y + 10, x^2 + rac{3}{4}x + 10]$$

$$J = [2xy + rac{3}{4}y, x^2 + rac{3}{4}x]$$

Correct

Well done!



points

2.

For $f(x,y)=e^x cos(y)+xe^{3y}-2$, calculate the Jacobian row vector J .

$$J=[e^xcos(y)+e^{3y},e^xsin(y)+xe^{3y}]$$

$$\int \int J = \left[e^x cos(y) + e^{3y}, -e^x sin(y) + 3xe^{3y}
ight]$$

Correct

Well done!

$$J = [e^x cos(y) + e^{3y} - 2, -e^x sin(y) + 3xe^{3y} - 2]$$

Practice Quiz, 5 questions

Calculating the Jacobian $J = [e^x cos(y) + e^{3y} - 2, e^x sin(y) + xe^{3y} - 2]$

5/5 points (100%)



1/1 points

For $f(x,y,z) = e^x cos(y) + x^2 y^2 z^2$, calculate the Jacobian row vector

$$igg) \quad J = [e^x cos(y) + 2xy^2 z^2, -e^x sin(y) + 2x^2 y z^2, 2x^2 y^2 z]$$

Correct

Well done!

$$J = [e^x cos(y) + 2xy^2z^2, e^x sin(y) + 2x^2yz^2, 2x^2y^2z^2]$$

$$J = [e^x sin(y) + 2xy^2z^2, -e^y sin(x) + 2x^2yz^2, 2x^2y^2z^2]$$

$$J=\left[e^{x}cos(y)+xy^{2}z^{2},-e^{x}sin(y)+x^{2}yz^{2},x^{2}y^{2}z
ight]$$



1/1 points

For $f(x,y,z)=x^2+3e^ye^z+cos(x)sin(z)$, calculate the the Jacobian row vector and evaluate at the point (0,0,0).

$$J(0,0,0) = [2,3,0]$$

Correct

Well done!

$$J(0,0,0) = [0,2,3]$$

$$J(0,0,0) = [3,0,2]$$



points

Calculating the Jacobian 5.

5/5 points (100%)

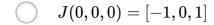
Practice Quiz, 5 questions $f(x,y,z)=xe^ycos(z)+5x^2sin(y)e^z$, calculate the Jacobian row vector and evaluate at the point (0,0,0).



$$J(0,0,0) = [1,0,0]\,$$

Correct

Well done!



$$\bigcirc \quad J(0,0,0) = [1,0,-1]$$

$$J(0,0,0) = [0,0,1]$$





