Congratulations! You passed!

TO PASS 80% or higher

Keep Learning

GRADE 100%

Calculating the Jacobian

TOTAL POINTS 5

1. In this quiz you will put into practice how to calculate the Jacobian from the lecture video. 1 / 1 point

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

- (●) $J = [2xy + \frac{3}{4}y, x^2 + \frac{3}{4}x]$
- ( ) $J = [xy + \frac{3}{4}y, x^2 + \frac{3}{4}xy]$
- ( ) $J = [xy + \frac{3}{4}y + 10, x^2 + \frac{3}{4}xy + 10]$
- ( ) $J = [2xy + \frac{3}{4}y + 10, x^2 + \frac{3}{4}x + 10]$

Correct
Well done!

2. For $f(x,y) = e^x cos(y) + xe^{3y} - 2$, calculate the Jacobian row vector J. 1 / 1 point

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

Correct
Well done!

3. For $f(x,y,z) = e^x cos(y) + x^2y^2z^2$, calculate the Jacobian row vector J. 1 / 1 point

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

Correct
Well done!

4. For $f(x,y,z) = x^2 + 3e^y e^z + cos(x)sin(z)$, calculate the the Jacobian row vector and evaluate at the point $(0,0,0)$. 1 / 1 point

- (●) $J(0,0,0) = [0,3,4]$
- ( ) $J(0,0,0) = [3,0,2]$
- ( ) $J(0,0,0) = [0,2,3]$
- ( ) $J(0,0,0) = [2,3,0]$

Correct
Well done!

5. For $f(x,y,z) = xe^y cos(z) + 5x^2 sin(y)e^z$, calculate the the Jacobian row vector and evaluate at the point $(0,0,0)$. 1 / 1 point

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

Correct
Well done!