Calculating the Jacobian

TOTAL POINTS 5

1.Question 1

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

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

1 / 1 point

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

2.Question 2

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

1 / 1 point

- J = [e^xcos(y) + e^{3y}, e^xsin(y) + xe^{3y}]
- J = [e^xcos(y) + e^{3y}, -e^xsin(y) + 3xe^{3y}]
- J = [e^xcos(y) + e^{3y} -2, -e^xsin(y) + 3xe^{3y}-2]
- J = [e^xcos(y) + e^{3y} -2, e^xsin(y) + xe^{3y}-2]

3.Question 3

For f(x,y,z) = e^xcos(y) + x^2y^2z^2, calculate the Jacobian row vector J.

1 / 1 point

- J = [e^xcos(y) + 2xy^2z^2, -e^xsin(y) +2x^2yz^2, 2x^2y^2z]
- J = [e^xcos(y) + xy^2z^2, -e^xsin(y) +x^2yz^2, x^2y^2z]
- J = [e^xcos(y) + 2xy^2z^2, e^xsin(y) +2x^2yz^2, 2x^2y^2z^2]
- J = [e^xsin(y) + 2xy^2z^2, -e^ysin(x) +2x^2yz^2, 2x^2y^2z^2]

4.Question 4

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).

1 / 1 point

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

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

5.Question 5

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

1 / 1 point

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