

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**Find all the first order partial derivatives for the following function.**

1) $f(x, y) = 3x - 4y^2 - 2$

1) _____

A) $\frac{\partial f}{\partial x} = 3; \frac{\partial f}{\partial y} = -8y$

B) $\frac{\partial f}{\partial x} = 3x; \frac{\partial f}{\partial y} = -8y$

C) $\frac{\partial f}{\partial x} = 1; \frac{\partial f}{\partial y} = -8y - 2$

D) $\frac{\partial f}{\partial x} = -8y; \frac{\partial f}{\partial y} = 3$

2) $f(x, y) = \frac{1}{\sqrt{x^2 + y^2}}$

2) _____

A) $\frac{\partial f}{\partial x} = -\left(\frac{x}{(x^2 + y^2)^{3/2}}\right); \frac{\partial f}{\partial y} = -\left(\frac{y}{(x^2 + y^2)^{3/2}}\right)$

B) $\frac{\partial f}{\partial x} = \left(\frac{x}{2(x^2 + y^2)^{3/2}}\right); \frac{\partial f}{\partial y} = \left(\frac{y}{2(x^2 + y^2)^{3/2}}\right)$

C) $\frac{\partial f}{\partial x} = -\left(\frac{1}{2(x^2 + y^2)^{3/2}}\right); \frac{\partial f}{\partial y} = -\left(\frac{1}{2(x^2 + y^2)^{3/2}}\right)$

D) $\frac{\partial f}{\partial x} = -\left(\frac{x}{2(x^2 + y^2)^{3/2}}\right); \frac{\partial f}{\partial y} = -\left(\frac{y}{2(x^2 + y^2)^{3/2}}\right)$

3) $f(x, y) = \ln(yx)$

3) _____

A) $\frac{\partial f}{\partial x} = x \ln y; \frac{\partial f}{\partial y} = -\frac{x}{y}$

B) $\frac{\partial f}{\partial x} = \ln y; \frac{\partial f}{\partial y} = -x \ln y$

C) $\frac{\partial f}{\partial x} = \ln y; \frac{\partial f}{\partial y} = \frac{x}{y}$

D) $\frac{\partial f}{\partial x} = 0; \frac{\partial f}{\partial y} = -\frac{x}{y}$

Use implicit differentiation to find the specified derivative at the given point.

4) Find $\frac{dy}{dx}$ at the point (1, 1) for $5x^2 + 5y^3 + 5xy = 0$.

4) _____

A) $-\frac{3}{4}$

B) $-\frac{3}{2}$

C) -1

D) $\frac{3}{4}$

5) Find $\frac{dy}{dx}$ at the point (2, 1) for $\ln x + xy^2 + \ln y = 0$.

5) _____

A) 1

B) -1

C) $-\frac{3}{10}$

D) $\frac{3}{10}$

Answer Key

Testname: 283-EXAM2-PARTIALSQUIZ

- 1) A
- 2) A
- 3) C
- 4) A
- 5) C