

King Fahd University of Petroleum & Minerals

Department of Mathematical Sciences

Math 201, Section: 15(051)

Quiz-4(a)

Time: 15 Minutes

Marks:...../9

Name:

Serial #:

ID#:

Section #:

1. Is the function $f(x, y) = \frac{1 - x^2 - y^2}{x^2 + y^2}$ continuous at $(0, 0)$? Give details in support of your answer.

2. Let $V = (x - at)^4 + \cos(x + at)$. Check whether or not $V_{tt} = a^2 V_{xx}$ holds.

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Quiz-4(b)

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Name:

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1. Suppose $f(x, y) = x^2 + y^2$ has a local linear approximation $L(x, y) = 2y - 2x - 2$ to f at a point $p(x_0, y_0)$. Find x_0 and y_0 . Use definition to check whether or not $f(x, y)$ is differentiable at $(0, 0)$.