

APPM 2350 Final Exam
Saturday, Dec 11th 7:30am-10am 2021

Show all your work and simplify your answers. Answers with no justification will receive no points. You may use a calculator, smartphone, smartwatch, or any other device.

Answer the following questions. You can use any method you wish, including derivatives.



(9, 16) TJ/F53 10.9091

Use the gradient of the function $f(x, y)$ (no credit will be given). Use ONLY the gradient to answer the following questions:

Justify your estimate.

At the point $(9, 16)$ in the direction $3 + 4j$. For credit, show work

Justifying or explaining your

Problem 3(25 points)

A metal plate lies in the xy -plane in the region $x = 4 - y^2$
(i.e the region in quadrants I and IV bounded by the