"QUIZ" for Lecture 10

NAME: (print!) Matthew Sternesky **Section:** _____

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q10FirstLast.pdf) ASAP BUT NO LATER THAN Oct. 8, 8:00pm

1. Find the local maximum and minimum point(s), the local maximum and minimum values, and saddle point(s) of the function

$$f(x,y) = 12x^2 - 4x^3 + 6y^2 + 12xy \quad .$$

$f_x = 24x - 12x^2 + 12y$ $\quad f_y = 12y + 12x$

$f_{xx} = 24 - 24x$ $\quad f_{xy} = 12$ $\quad f_{yy} = 12$

$x = 0 \quad y = 0$

$C.P. = (0,0)$

$D = 24 \cdot 12 - 12^2$

$D = 144$ ← saddle point

no max or min