Quiz #8; Tuesday, date: 03/13/2018
MATH 53 Multivariable Calculus with Stankova
Section #114; time: 2 – 3:30 pm
GSI name: Kenneth Hung
Student name:

1. Find the absolute maximum and minimum values of f on the set D, where

$$f(x,y) = x^2 y$$
$$D = \{(x,y) \mid x \geq 0, y \geq 0, x^2 + y^2 \leq 9\}$$

2. *True / False?* The normal vector to the surface $z = f(x,y)$ at point $(a,b,f(a,b))$ is
$$\langle f_x(a,b), f_y(a,b), -1 \rangle.$$

3. *True / False?* Suppose the second partial derivatives of D is continuous on a disk near (a,b). Then for second derivative test, if the determinant $D > 0$ and $f_{yy}(a,b) > 0$, we cannot determine if this is a local minimum or maximum because we do not know the sign of $f_{xx}(a,b)$.