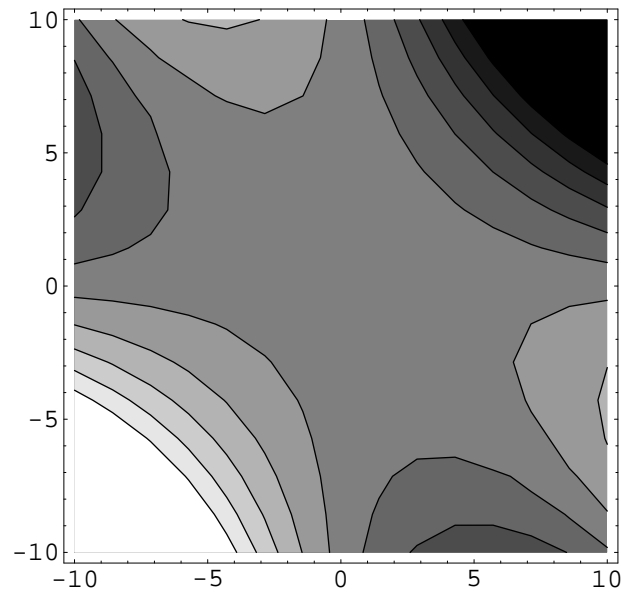


Mock Quiz 3

Instructions. Write your name on this document right now. Solve the problems below.

1. Let $f(x, y) = xy(1 - x - y)$. This function is plotted below.



Find and classify all critical points of f using the Second Derivative Test.

2. Find all extreme values of $f(x, y, z) = x + 3y + 5z$ subject to the constraint $x^2 + y^2 + z^2 = 1$.