Math 173- Quiz 9
April 9, 2015
Name $\qquad$
Score $\qquad$

Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) Find the absolute extreme values of $f(x, y)=x y^{2}-4 x$ subject to $x^{2}+y^{2}=4$.
2. (5 points) Find the absolute minimum value of $f(x, y, z)=x^{2}+y^{2}+z^{2}$ subject to $x+y-z=3$. Explain why there is no maximum value.
