Quiz 7

Student ID Number: Name _____

Math 175, 12PM

Please justify all your answers   March 5, 2020

Please also write your full name on the back

1. True or False?

   (a) A bipartite graph must be triangle-free.

   (b) 3, 3, 3, is a valid degree sequence for a graph.

2. Let $G = (V, E)$ be a graph and let c be the number of connected components of G. Show that if e is an edge, then the number of connected components of $G \setminus e$, G with edge e deleted, is either c or $c + 1$.

3. Let G be a k-regular (each vertex has degree k), $k \geq 2$, bipartite graph. Show that deleting an edge of G does *not* increase its number of connected components.