

Quiz 6

Student ID Number:

Name _____

Math 175, 12PM

Please justify all your answers

February 27, 2020

Please also write your full name on the back

1. True or False?

- (a) A graph is a tree if and only if it is acyclic.
- (b) If every vertex in a graph G has degree 2 then G is a cycle.

2. Let G be a bipartite graph with parts U and V (that is, every edge in G has one vertex in U and one in V). What is the maximum number of edges G can have?

3. If every vertex in a graph G has degree k we say G is k -regular.

- (a) Let G be an n -vertex k -regular graph. How many edges does G have?

- (b) Show that if G has n vertices and is k -regular and k is odd, then n must be even.