MATH 233
Fall 2018
Quiz #4 B

***Duration:* 50 minutes.**
***Remark:* Show your thinking/work. Do not just write a number or a formula as a result.**

1. A **graph** G=(V,E) is a set of vertices (V) and a set of edges (E) between vertices. A **tree** is a special graph, which is **connected** and has no **cycle**.

a) Draw all trees on **three** vertices. Let V = $\{v_1, v_2, v_3\}$
b) What is the **number** of all possible **trees** with **n** vertices?

2. Let a be **x** positive integer whose set of prime factors is $\{p_1, p_2, \ldots p_n\}$. Let **y** be a positive integer whose set of prime factors is $\{q_1, q_2, \ldots q_m\}$. How can you form the **greatest common divisor** of **x** and **y** when you know the sets of prime factors?