Google Interview on February 19, 2015

Atlantic  
WWWWWWW LAND  
W 1 3 4 5 2 **3** W  
W 2 4 **5** 2 3 4 W  
W 6 **7 8** 2 4 3 W  
W **2** 3 4 5 6 7 W  
LAND WWWW W Pacific

Find the Continental divide numbers (given as a 2-dimensional array) whereby there is a path from a peak that goes down toward the Atlantic ocean and another toward the Pacific ocean. The top-right and bottom left always are in the answer, as they run to the Atlantic and Pacific. Return the coordinates of the points that form a peak. The path must connect to the Pacific via steps that are each smaller or equal to the prior. In essence, if rain falls down on the mountain, will it reach both the Atlantic and the Pacific. Receive a 2 dimensional array of positive integers and return all coordinates (r,c) that form the continental divide.

Given an array of positive integers, find all triples that form a Pythagorean triangle, where a^2 + b^2 = c^2. Return an arrayList of triples.

Given an ArrayList of ranges (x-y), none of which overlap, and another range (x2-y2), return an ArrayList of ranges after merging the additional range into the ordered list of ranges.

3-7, 10-14, 17-17, and 5-11 🡪 3-11, 17-17  
3-7, 10-14, 17-17, 19-22 and 7-17 🡪 3-17, 19-22

Given a 2-dimentional array of integers, return a 1-dimensional Array of diagonal sums

1 2 3 4  
5 6 7 8  
9 2 1 3

9 = 9, 5 + 2 = 7, 1 + 6 + 1 = 8, 2 + 7 + 3 = 12, 3 + 8 = 11, 4 = 4.  
Return 9, 7, 8, 12, 11, 4

Given a list of friend connections (Friend – Friend), with each friend having a String (name) and an Integer (ID), sort the friends in order of how many levels away from me. Immediate friends are level 1, friends of friends are level 2, friends of friends of friends are level 3, and so on. Among friends of the same level, sort them in the order of how often they are friends with closer level friends. Return the ArrayList of friends in order. Might have to provide who the main person is that has friends, or give a list of my immediate friends.