HW4 textbook problems:

1. Consider a dataset with following points in 2-dimensional space: (1,1), (2,1), (1,2), (2,2), (7,1), (8,1), (7,2), and (8,2).

Show the clustering results using k-means with each of the following initial seed pairs:
(a) seed 1: (3, 2)
    seed 2: (5, 2)

(b) seed 1: (3, 1)
    seed 2: (3, 0)

(c) seed 1: (4, 1.5)
    seed 2: (15, 1.5)
2. Consider following map (upper) and neighbor graph (lower) of fast-food restaurants by Burger King (B), McDonald’s (M), and Pizza Hut (P).

Compute participation index (an interest measure for colocation) for the following pairs:
(a) (Burger King, Pizza Hut)
(b) (Pizza Hut, McDonald’s)
(c) (Burger King, McDonald’s)