8.1 Show the result of the following sequence of instructions: ***union(1,2), union(3,4), union(3,5), union(1,7), union(3,6), union(8,9), union(1,8), union(3,10), union (3,11), union(3,12), union(3,13), union(14,15), union(16,0), union(14,16), union (1,3), union(1, 14)*** when the unions are
a. performed arbitrarily
b. performed by height
c. performed by size

8.2 For each of the trees in the previous exercise, perform a find with path compression on the deepest node.

8.3 Write a program to determine the effects of path compression and the various unioning strategies. Your program should process a long sequence of equivalence operations using all six of the possible strategies.