

Name: _____

Directions: Show all work.

1. [2 parts, 4 points each] Lists and monotone subsequences.

(a) Give a list of 15 distinct integers that has no increasing subsequence of size 4 and no decreasing subsequence of size 6.

(b) Prove that every list of 16 distinct integers either contains an increasing subsequence of size 4 or a decreasing subsequence of size 6.

2. [2 points] How many edges are in K_6 , the complete graph on 6 vertices?