Jon Turner

Review Questions 22

Vour	Name.
1 ()14.1	NUMBER

Please print out this form (two-sided, if you can) and write your answers *legibly* in the spaces provided. If you can't write legibly, type.

1. Suppose that a path set on *n* vertices is implemented as a collection of lists. For this implementation, what is the worst-case running time of each of the operations?

2. Suppose we implemented a path set as a collection of balanced binary search trees, where the search tree order corresponds to the order in the path (so, the leftmost node in the search tree corresponds to the head of the path, the rightmost node corresponds to the tail of the path). Draw a binary search tree that represents the path at the top of Figure 2 in *JST*22 that contains node *a*. For this implementation, what is the worst-case running time of the *findpath*, *findtail*, *join* and *split* operations?

3.	Assuming the binary search tree from the previous question contains no additional information, how would you perform the <i>findpathcost</i> operation? What is the worst-case running time?