Exercise on ROC curves
Consider the following classification tree. For each node the number of +ve/-ve records is indicated.

For any \( p \in [0,1] \) we classify the leaves of the tree as +ve/-ve according to whether or not the proportion of +ve records is \( \geq p \) or < \( p \).

a) For each value of \( p \in [0,1] \) calculate the misclassification rate for this tree.
b) Hence plot the ROC curve for this classifier.
c) Suppose that the cost of a false +ve is \( c_+ \) and that the cost of a false –ve is \( c_- \), what value of \( p \) minimizes the expected cost of using this classifier?