**Group D Homework Group Credit Task**

Compute the GINI-gain[[1]](#footnote-1) and information gain[[2]](#footnote-2) for the following decision tree split:

(10,4,6) (3,3,0)

(7,1,0)

 (0,0,6)

We assume we have a classification problem involving 3 classes C1, C2, C3. The above information can be interpreted as follows: Before the split there are 10 examples belonging to class C1, 4 examples of class C2, and 6 examples of class 3 associated with the node. After a 3-way split 3 new nodes are introduced and 3 examples of class A and 3 examples of class B are associated with the first new node, 7 examples of class C1 and 1 example of class C2 are associated with the second new node, and 6 examples of class C3 are associated with the third new node.

1. (GINI before the split) minus (GINI after the split) [↑](#footnote-ref-1)
2. Entropy before the split minus entropy after the split. [↑](#footnote-ref-2)