1. (i) $p \geq \dfrac{2}{n(n-1)} = \dfrac{1}{28}$

(ii) there is no problem with 2 components, but with 3 or more components, the loop will never terminate, since the number of UF components will never drop below the number of components in the graph

(iii) repeat the loop until the number of components is 2, or all edges are marked. with this change, the partition returned is always a min cut

2.

```
        9   4   2   8  10   5  10   9   2   4

LIS     1   1   1   2   3   2   3   3   1   2

LNDS    1   1   1   2   3   2   4   3   2   3
```