CSC 226 Assignment 4
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1. Algorithm PrintLCS (llcs [] []) {
    S ← stack
    i ← length of x
    j ← length of y
    while (i ≠ 0 and j ≠ 0)
    if (llcs [i][j] > llcs [i-1][j] and llcs [i][j-1]
    s.Push(charAt (llcs [i][j])) i-1, j-1
    if (llcs [i][j] = llcs [i][j-1]) j-1
    if (llcs [i][j] = llcs [i-1][j]) i-1
    while (s != empty) Print (s.POP())

2. Since we can decompose any feasible flow f on a network G into at most cycles and s-t path, we compose the flow into s-t paths and cycles. Each s-t path must end up in $\bar{S}$, it must go from set S to $\bar{S}$ one more time from $\bar{S}$ to S. Therefore, an s-t path carring x flow along that path contributes exactly x to the value of the cut. A cycle must go from S to $\bar{S}$ the same times as go from $\bar{S}$ to S, contribute 0 to the value of the cut. Therefore, the total value of the cuts is equal to the sum of the flow along every s-t path i.e $f(x) = |f|$
$|f| = \sum_{e \text{ out of } S} f(e) - \sum_{e \text{ into } S} f(e) = \sum_{e \text{ out of } S} u(e) = f(x)$

3. $i_1 = 2\ 9\ 3\ \infty\ \infty\ \infty$
$i_2 = 2\ 9\ 3\ 6\ 7\ 5$
$i_3 = 2\ 6\ 3\ 6\ 7\ 5$
$i_4 = 2\ 6\ 3\ 6\ 7\ 5$
$i_5 = 2\ 6\ 3\ 6\ 7\ 5$
$i_6 = 2\ 6\ 3\ 6\ 7\ 5$