Input: this text
Output: how to write algorithm with LaTeX2e

```
initialization
while not at end of this document do
    read current
    if understand then
        go to next section test test
        current section becomes this one
    else
        go back to the beginning of current section
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// while not at end of this document do
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H

PRINT-LCS(b, X, i, j)

Input: this text

Output: how to write algorithm with asd asdw asd a LaTeX2e

if $i = 0$ *or* $j = 0$ **then**
  return
if $b[i, j] =$ "$\nwarrow$" **then**
  PRINT-LCS($b, X, i - 1, j - 1$)
  print x_i
else if $b[i, j] =$ "$\uparrow$" **then**
  PRINT-LCS($b, X, i - 1, j$)
else
  PRINT-LCS($b, X, i, j - 1$)

Algorithm 1: Second algorithm to see

Color-Good-Partition$(G, K_1, K_2, K_3, L, R, c_1, c_2)$

Input: G – square-free, Berge graph
(K_1, K_2, K_3, L, R) – good partition
c_1, c_2 – colorings of $G \setminus R$ and $G \setminus L$ (possibly NULL)

Output: $\omega(G)$-coloring of G

$G_1 \leftarrow G \setminus R$
$G_2 \leftarrow G \setminus L$
if $c_1, c_2 =$ NULL **then**
  $c_1 \leftarrow$ Color-Graph(G_1)
  $c_2 \leftarrow$ Color-Graph(G_2)
foreach $u \in K_1 \cup K_2$ **do**
  relabel c_2, so that $c_1(u) = c_2(u)$
$B \leftarrow \{u \in K_3 : c_1(u) \neq c_2(u)\}$
if $B = \emptyset$ **then return** $c_1 \cup c_2$
foreach $h \in [2]$, distinct colors i, j **do**
  $G_h^{i,j} \leftarrow$ subgraph induced on G_h by $\{v \in G_h : c_h(v) \in \{1, 2\}\}$
foreach $u \in K_3$ **do**
  $C_h^{i,j}(u) \leftarrow$ component of $G_h^{i,j}$ containing u
ASSERT: $C_h^{c_1(u), c_2(u)}(u) \cap K_2 = \emptyset$
if $\exists u \in B, h \in [2] : C_h^{c_1(u), c_2(u)}(u) \cap K_1 = \emptyset$ **then**
  $c_1' \leftarrow c_1$ with colors i and j swapped in $C_1^{i,j}(u)$
  ASSERT: c_1' and c_2 agree on $K_1 \cup K_2$
  ASSERT: $\forall u \in K_3 \setminus B : c_1'(u) = c_1(u)$
  ASSERT: $c_1'(u) = j = c_2(u)$
  return Color-Good-Partition$(G, K_1, K_2, K_3, L, R, c_1', c_2)$
else
  $w \leftarrow$ vertex of B with nost neighbors in K_1
  ASSERT: $\forall u \in B : N(u) \cap K_1 \subset N(w) \cap K_1$
  relabel c_1, c_2, so that $c_1(w) = 1, c_2(w) = 2$
  $P \leftarrow$ chordless path $w - p_1 - \ldots - p_k - a$ in $C_1^{1,2}(w)$ so that
    $k \geq 1$, $p_1 \in K_3 \cup L$, $p_2 \ldots p_k \in L$, $a \in K$, $c_1(a) \in [2]$
  $Q \leftarrow$ chordless path $w - q_1 - \ldots - q_l - a$ in $C_2^{1,2}(w)$ so that
    $l \geq 1$, $q_1 \in K_3 \cup R$, $q_2 \ldots q_l \in R$, $a \in K$, $c_2(a) \in [2]$
  $i \leftarrow c_1(a)$
  $j \leftarrow 3 - i$
  ASSERT: exactly one of the colors 1 and 2 appears in K_1 (as in Lemma 2.2.(3))
  ASSERT: $|P|$ and $|Q|$ have different parities
  ASSERT: $p_1 \in K_3 \vee p_2 \in K_3$ (as in Lemma 2.2.(4))
  ASSERT: $\nexists y \in K_3 : c_1(y) = 2 \wedge c_2(y) = 1$ (as in Lemma 2.2.(5))
  if $p_1 \in K_3$ **then**
    ASSERT: $c_2(p_1) \notin [2]$
    relabel c_2, so that $c_2(p_1) = 3$

else

// **if** $p_1 \in K_3$ **then**

ASSERT: color 3 does not appear in K_2

ASSERT: color 3 does not appear in K_1

ASSERT: $C_2^{j,3}(p_1) \cap K_1 = \emptyset$

$c'_2 \leftarrow c_2$ with colors j and 3 swapped in $C_2^{j,3}(TODO)$