1. Pseudo Code:
   div(RatPoly v):
   u_d = degree of u
   v_d = degree of v;
   r = u
   i=$u_d - v_d$
   if $i < 0$
   return ZERO
   create array Q with length($u_d - v_d + 1$)
   while($i \geq 0$){
   $j = v_d$
   $Q[i] = r[i+j]/v[j]$
   while($j \geq 0$){
   $r[i+j] = r[i+j] - Q[i] * v[j]$
   $j--$
   }
   $i--$
   }
   return RatPoly(Q)

2. Main Loop LI:
   $Q * v + r = u$
   Proof:
   Base case:
   $r = u, Q = 0$,therefor the base case is true
   Assume Step k is true
   Proof that Step k+1 is true
   $Q_{k+1} = Q_k + Q[k-1] * x^{k-1}$
   The inner loop guarantee that $r_{post} = r_{new} + Q[i] * v * x^i$
   therefore $r_{k+1} = r_k - Q[k-1] * v * x^{k-1}$
   $Q[k-1] = r_k/v[v_d]$
   therefore $r_{k+1} + Q_{k+1} = r_k - Q[k-1] * v * x^{k-1} + Q_k + Q[k-1] * x^{k-1} = r_k + Q_k * v = u$
   therefore It is true for step k+1
   therefore It is true for each step

3. Decrementing function:
   D = i
   i decrements by 1 for each step
   $D_{min} = -1$
   The loop will exit at $i = -1$