

Choice for the bounding function

1 chosen, 0 - not chosen.

w_i of x_i

$B_K(x_1, \dots, x_K) = \text{true}$ iff

$K+1$ st

S $\left(\sum_{i=1}^K w_i x_i + \right)$

$\left\{ \begin{array}{c} \uparrow \\ 0/1 \end{array} \right\}$

$\sum_{i=K+1}^n w_i > m$

matching total

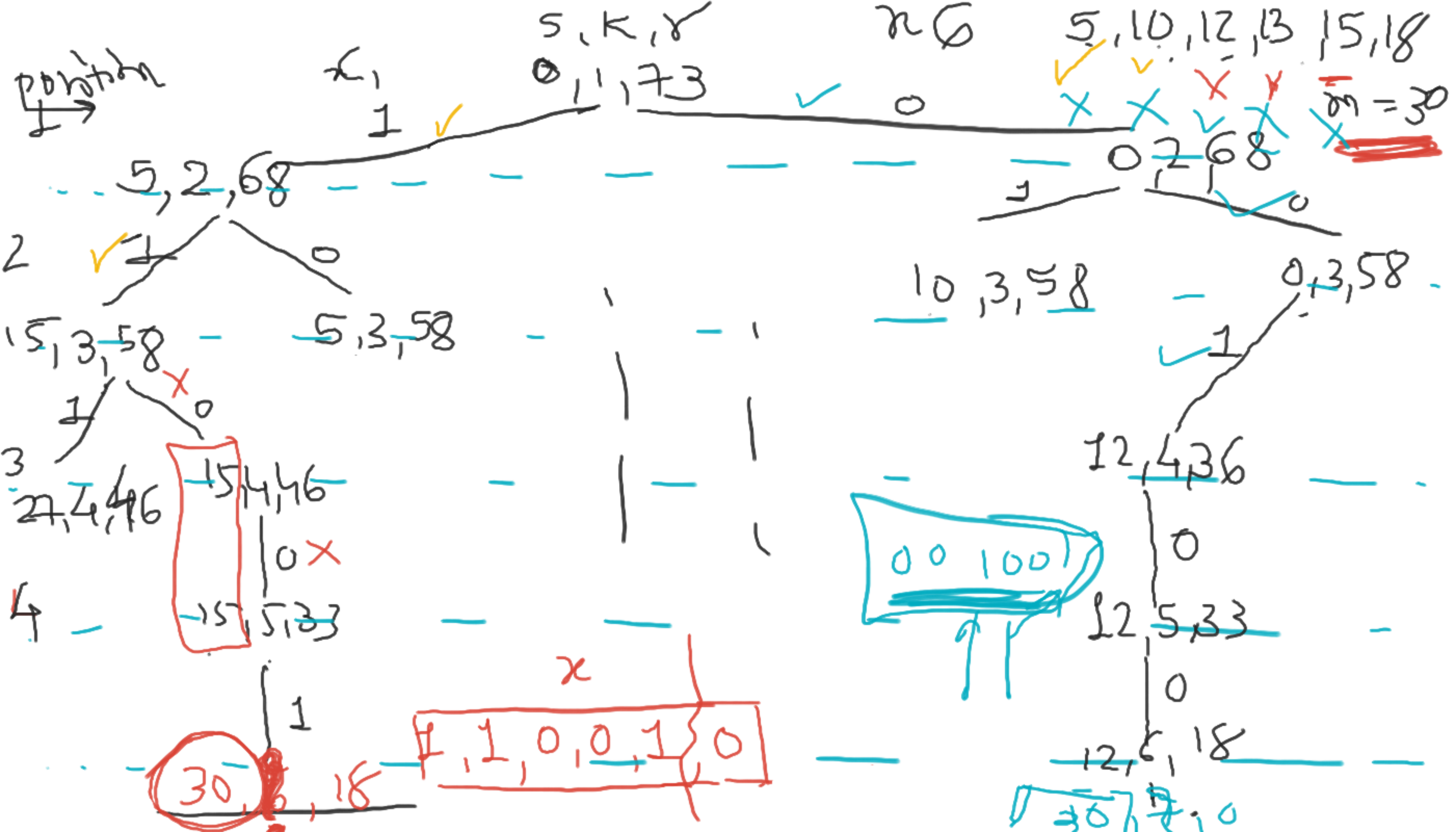
Assuming Random order weights

$\left(\sum_{i=1}^K w_i x_i + \right) w_{K+1} > m$

Assuming Nondecreasing order

Algorithm RSumOfSub(S, k, r) // fixed length over
 { // generate left child
 $x[k] = 1$;
 // if ($s + w[k] == m$) then
 // // array subset found
 // else if ($s + w[k] + w[k+1] \leq m$) then
 RSumOfSub($\underline{s + w[k]}, \underline{k+1}, \underline{r - w[k]}$)
 // generate right child
 if ($(s + r - w[k] \geq m)$ and ($s + w[k+1] \leq m$))
 {
 $x[k] = 0$;
 RSumOfSub($s, k+1, r - w[k]$);
 }
 }

left child 1
 $s + w[k] \leq m$
 $s = \sum_{j=1}^{k-1} w[j] \cdot x[j]$
 right child 0
 $r = \sum_{j=k}^n w[j]$
 $[S, 10, 12, 13, 15, 18]$
 $n = 6$
 $m = 30$



Courtesy Book Fundamentals of
Comp Algo Pg. 377
Horowitz & Sahai & Raj