

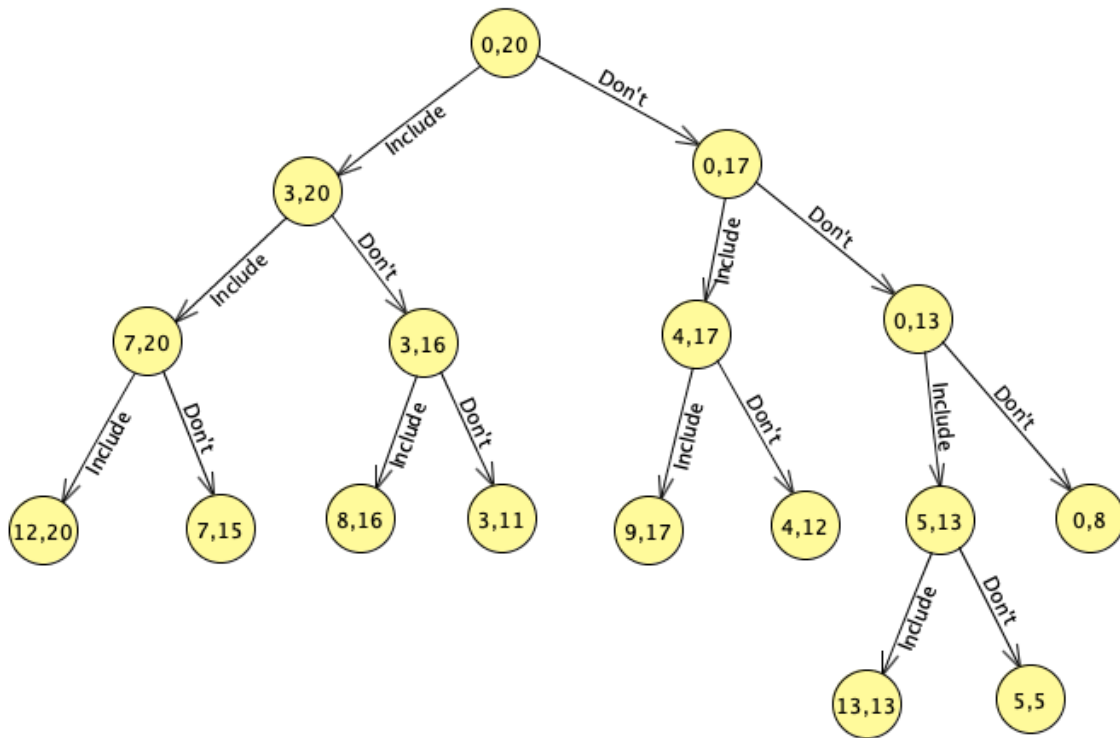
# CS 375 HW<sub>I</sub>

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April 30, 2019

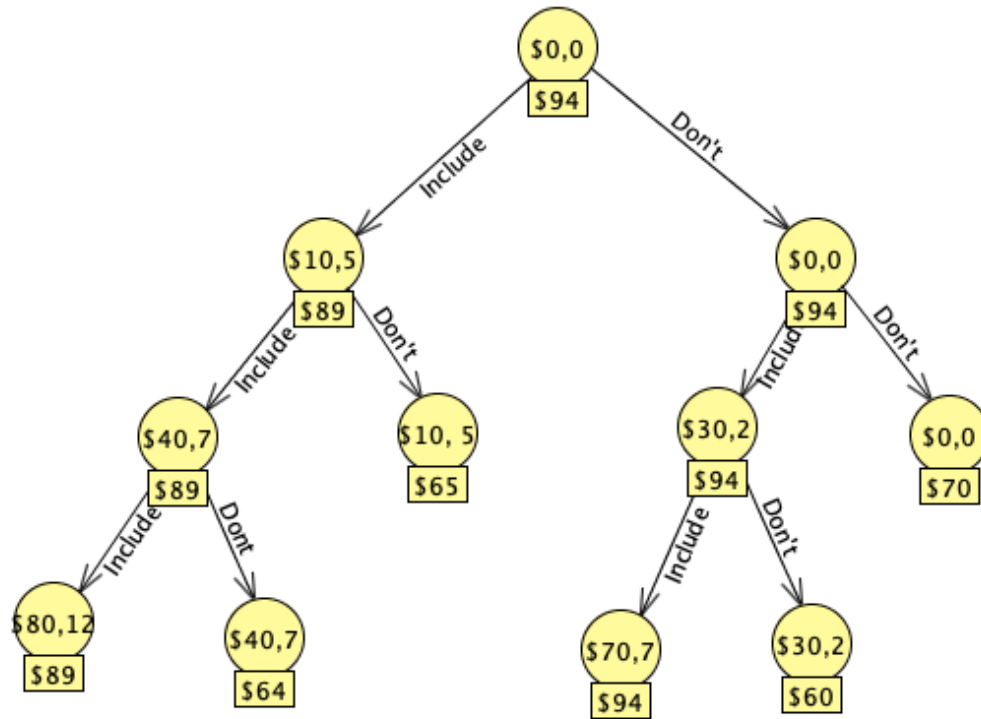
“I have done this assignment completely on my own. I have not copied it, nor have I given my solution to anyone else. I understand that if I am involved in plagiarism or cheating I will have to sign an official form that I have cheated and that this form will be stored in my official university record. I also understand that I will receive a grade of 0 for the involved assignment for my first offense and that I will receive a grade of “F” for the course for any additional offense.”

Question 1: Set:  $[3, 4, 5, 8]$  find subsets that sum to 13



Optimal:  $\{5, 8\}$  or Item 3 and 4

Question 2:



Question 3:

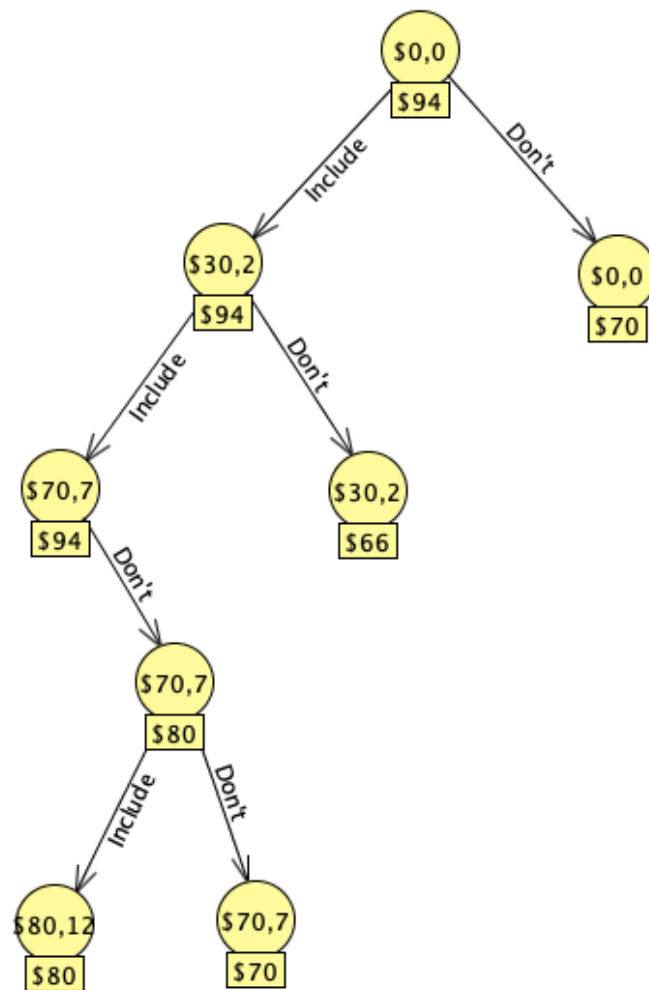
Sorted:

Item 1: \$30, 2lb, \$15/lb

Item 2: \$40, 5lb, \$8/lb

Item 3: \$30, 10lb, \$3/lb

Item 4: \$10, 5lb, \$2/lb

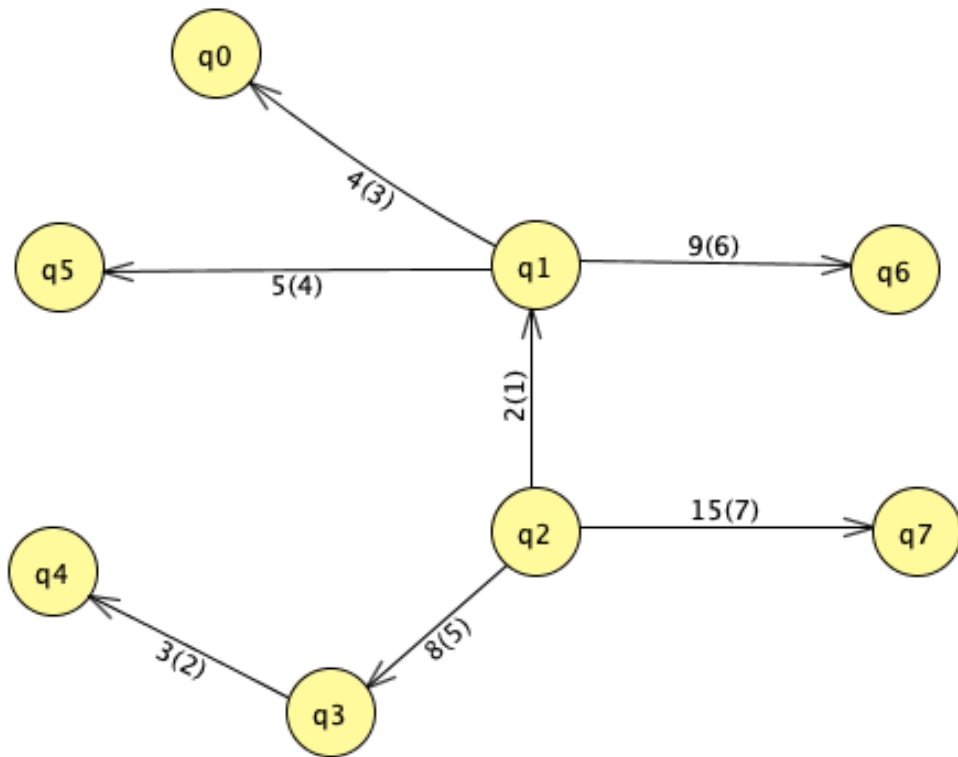


Question 4:

| <i>NodeAdded</i> | <i>D(a)nearest</i> | <i>D(b)nearest</i> | <i>D(c)nearest</i> | <i>D(d)nearest</i> |
|------------------|--------------------|--------------------|--------------------|--------------------|
| $\{\}$           | $\infty/NILL$      | $\infty/NILL$      | $\infty/NILL$      | $\infty/NILL$      |
| $\{a\}$          |                    | $8/a$              | $1/a$              | $\infty/NILL$      |
| $\{a, c\}$       |                    | $3/c$              |                    | $5/c$              |
| $\{a, c, b\}$    |                    |                    |                    | $2/b$              |

Question 5:

Note: formatted as "x(y)" where x is the weight and y is the order picked



Total Weight = 2+3+4+5+8+9+15 = 46

Question 6:

$$D(0) = \begin{array}{|cccc|} \hline 0 & 8 & ? & 1 \\ ? & 0 & 1 & ? \\ 4 & ? & 0 & ? \\ ? & 2 & 9 & 0 \\ \hline \end{array}$$

$$D(1) = \begin{array}{|cccc|} \hline 0 & 8 & ? & 1 \\ ? & 0 & 1 & ? \\ 4 & 12 & 0 & 5 \\ ? & 2 & 9 & 0 \\ \hline \end{array}$$

$$D(2) = \begin{array}{|cccc|} \hline 0 & 8 & 9 & 1 \\ ? & 0 & 1 & ? \\ 4 & 12 & 0 & 5 \\ ? & 2 & 3 & 0 \\ \hline \end{array}$$

$$D(3) = \begin{array}{|cccc|} \hline 0 & 8 & 9 & 1 \\ 5 & 0 & 1 & 6 \\ 4 & 12 & 0 & 5 \\ 7 & 2 & 3 & 0 \\ \hline \end{array}$$

$$D(4) = \begin{array}{|cccc|} \hline 0 & 3 & 4 & 1 \\ 5 & 0 & 1 & 6 \\ 4 & 7 & 0 & 5 \\ 7 & 2 & 3 & 0 \\ \hline \end{array}$$