(1) $P(0, 1) = 0$ $\quad P(C, 1) = 0$ for $C < w_1$

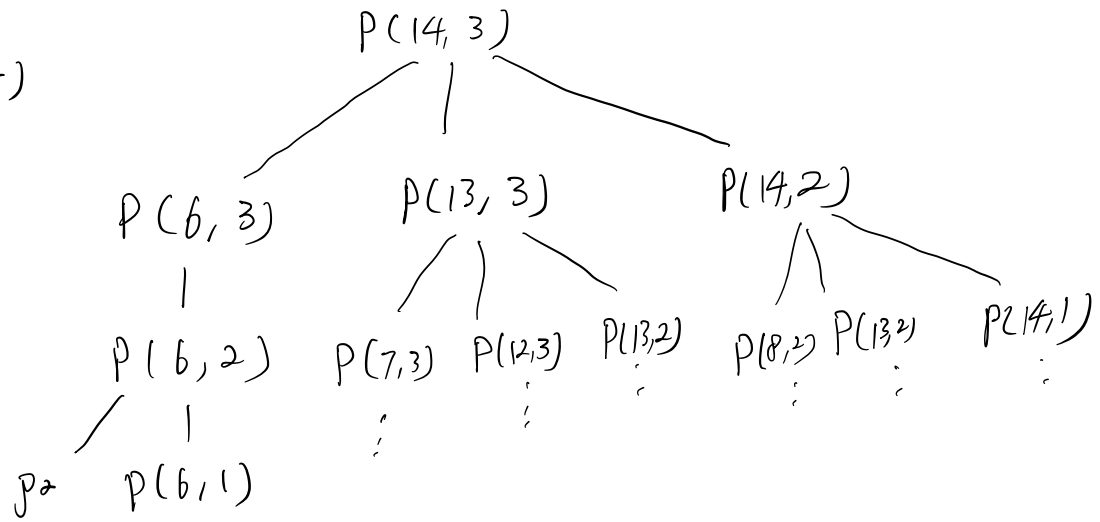
$P(w_1, 1) = p_1$

$$P(C, i) = \begin{cases} P(C, i-1) & C < w_i \\ \max(p_i, P(C, i-1)) & C = w_i \\ \max(P(C-w_i, i) + p_i, P(C-1, i), P(C, i-1)) & C > w_i \end{cases}$$

(a)

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (4,7) | 1 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 14 | 14 | 14 | 14 | 21 | 21 | 21 |
| (6,6) | 2 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 14 | 14 | 14 | 14 | 21 | 21 | 21 |
| (8,9) | 3 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 14 | 14 | 14 | 14 | 21 | 21 | 21 |

(2)




(b)

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (5,7) | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 7 | 14 | 14 | 14 | 14 | 14 |
| (6,6) | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 7 | 14 | 14 | 14 | 14 | 14 |
| (8,9) | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 9 | 9 | 14 | 14 | 14 | 16 | 16 |