Edwin (Stony) Sparks
11-28-21

1)
```
If n = 0
    Return 0
If n > 0
    For i = 1, n
        For j = 0, m
            If D[j] <= i
                int R = P[i - D[j]]
                if (R != MAX and R+1 < P[i])
                    P[i] = R+1
```

2) i=1 | 3 | 1 | 2 | 5 | 4 | 2 | 2 |

    i=2 | 3 | 1 | 2 | 5 | 4+2 | 2 |

    i=3 | 3 | 1 | 2 | 5+2 | 4+2 |

    i=4 | 3 | 1 | 2+4+2 |

    i=5 | 1 | 3+4+2+2 | $\longrightarrow$ Max Possible Loot = 11

    Pick Houses : 7, 5, 3, 1

3)

Capacity

items	0	1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0	0	0
1	0	15	15	15	15	15	15	15	15
2	0	15	15	15	15	15	25	25	25
3	0	15	15	15	24	24	25	25	25
4	0	15	15	15	24	24	25	25	(29)

Do i really need to show addition?

a) Max Value is 29

b) items: {1, 3, 4}

Proof: item 2 + item 3 = W:8 Value: 19
        item 1 + item 3 + item 4 = W:8 Value 29
        $\longrightarrow$ No other Combination = W:8 $\longleftarrow$