# Daily Exercise Solution
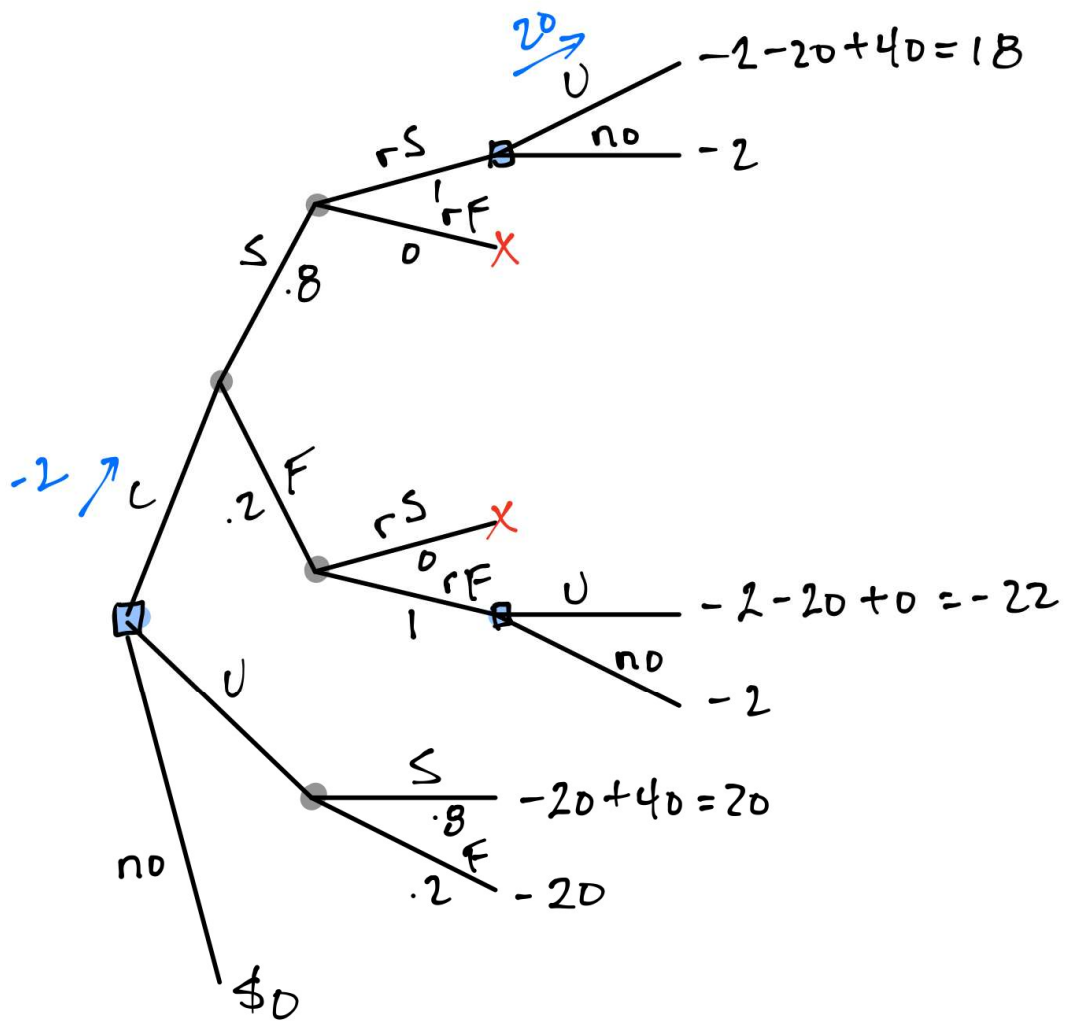
Given information:

Upgrade cost: $20 M
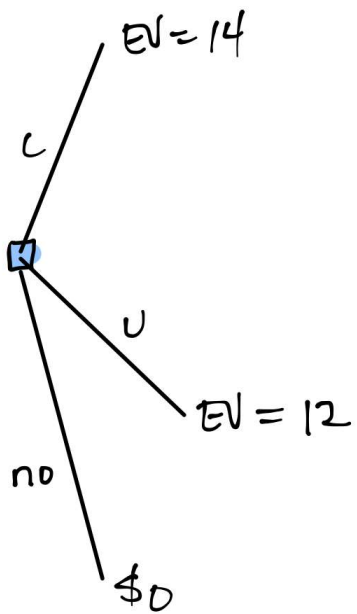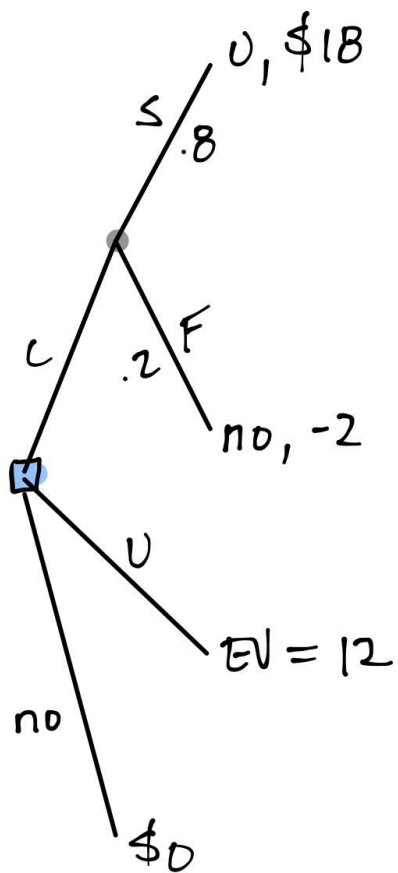
| State | Probability | Benefit |
|-------|-------------|---------|
| S | 80% | $40 M |
| F | 20% | $0 |

Consulting study: $2 M

Constructing the tree:

**Decision tree (hand-drawn):**

- $\overset{20}{\nearrow}$ U: $-2 - 20 + 40 = 18$
- rS → B — no: $-2$
- rF (0): X
- S .8
- F .2
- rS (0): X
- rF (1) → B — U: $-2 - 20 + 0 = -22$; no: $-2$
- $-2 \nearrow$ C
- U
- S .8: $-20 + 40 = 20$
- F .2: $-20$
- no: $\$0$

Evaluating it:

## First decision tree

S .8 → U, $18

F .2 → no, -2

C node → U → EV = 12

no → $0

## Second decision tree

C → EV = 14

U → EV = 12

no → $0

Best option is C: order the consulting study