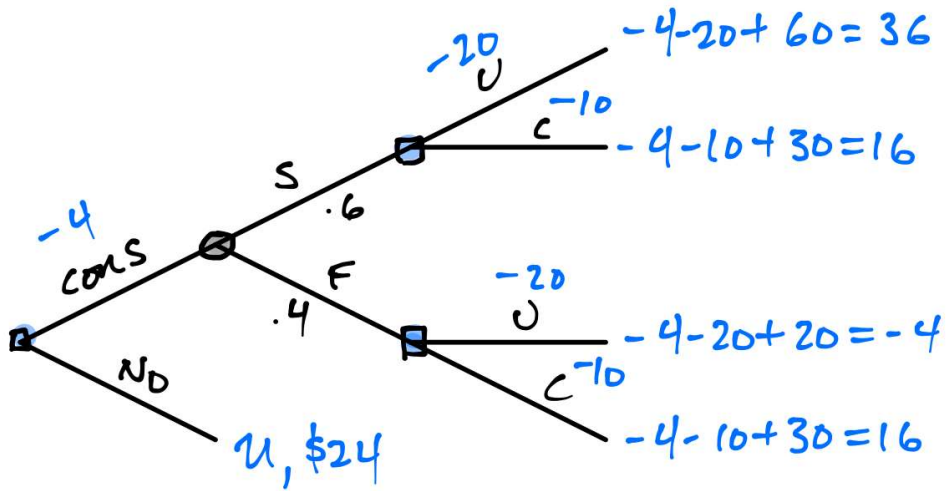
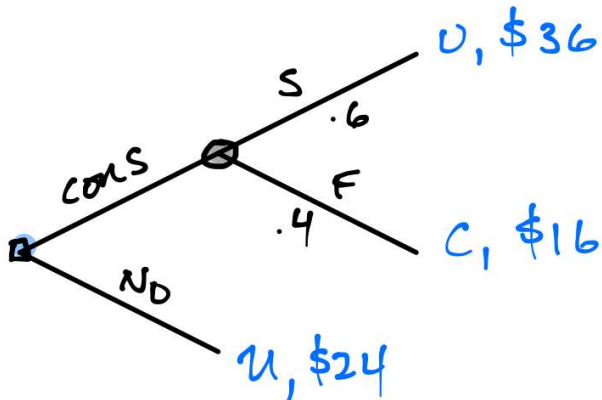


## E: Buying information - Solution

Updated decision tree with consultant:

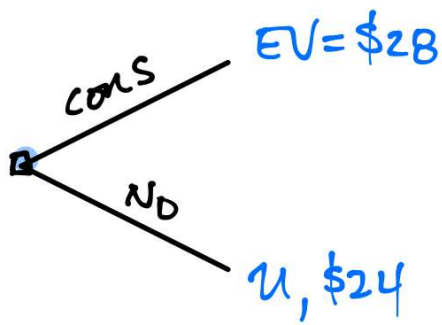


Evaluating the right-most decision nodes:



Evaluating the right chance node:

$$EV = 0.6 * 36 + 0.4 * 16 = 28$$



Conclusion:

Hire the consulting firm **even though** it would upgrade anyway

What's the gain?

Knowing if F will occur: can avoid U when it would fail

Very valuable:

- Without consultant, would do U
- If F would occur, gross gain of  $16 - (-4) = 20$  M from switching from U to C
- Probability of F is 0.4, so EV of gross gain =  $0.4 * 20 = 8$  M
- Net gain after fee:  $8 \text{ M} - 4 \text{ M} = 4 \text{ M}$
- Overall payoff is 4 M higher than U