Q2>

Probability of finding time : 0.3

Cost (single ticket) = Rs 1,000

Cost (combined) = Rs 1800

Value of going to movie = Rs 1,500

M: Movie

C: Concert

option		M, C (p = 0.09)	M, ¬C (p = 0.21)	¬M, C (p = 0.21)	¬M, ¬C (p = 0.49)
Combined	Cost	1800	1800	1800	1800
	Value	2500	1500	0	0
	Total	700	-300	-1800	-1800
Single	Cost	2000	1000	1000	0
	Value	2500	1500	0	0
	Total	500	500	-1000	0

Expected value of buying combined ticket =

$= 0.09 \times 700 + 0.21 \times -300 + 0.21 \times -1800 + 0.49 \times (-1800)$

$= -1260$

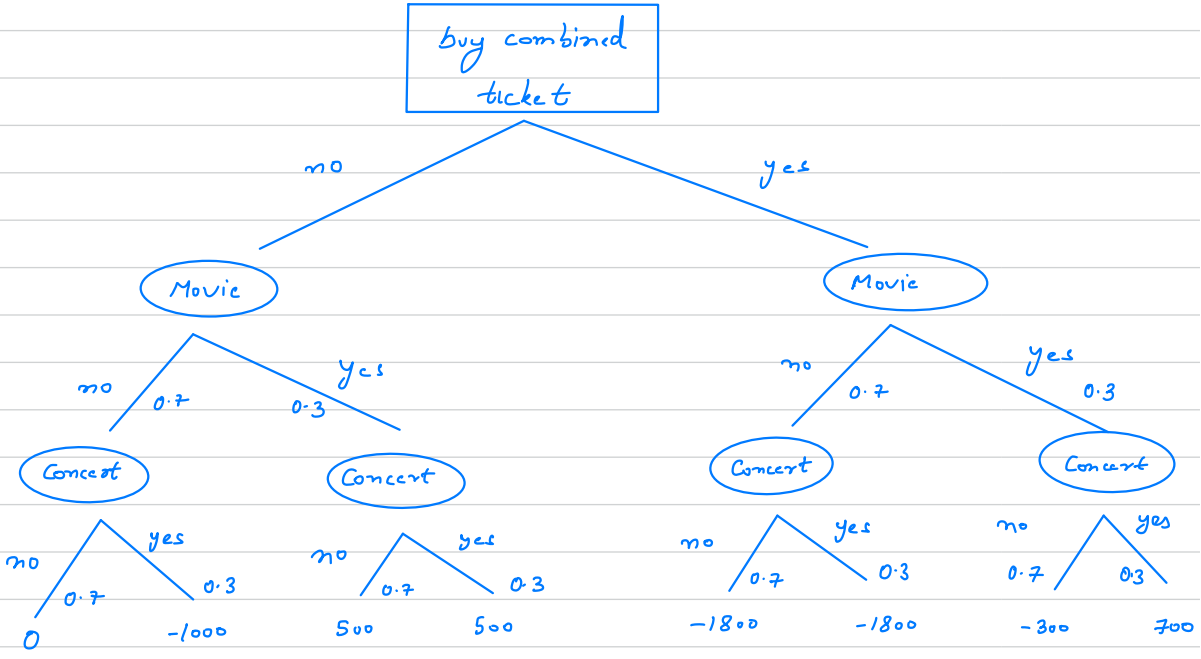
Expected value of buying single ticket =

$= 0.09 \times 500 + 0.21 \times 500 + 0.21 \times (-1000) + 0.49 \times 0$

$= -150$

$\Rightarrow$ we should buy combined ticket

→ Decision Tree



→ when combined probability is 0.4

Probability of finding time : 0.4
Cost (single ticket) = Rs 1,000
Cost (combined) = Rs 1800
Value of going to movie = Rs 1,500

M: Movie
C: Concert

option		M, C (p = 0.16)	M, ¬C (p = 0.24)	¬M, C (p = 0.24)	¬M, ¬C (p = 0.36)
Combined	Cost	1800	1800	1800	1800
	Value	2500	1500	0	0
	Total	700	-300	-1800	-1800
Single	Cost	2000	1000	1000	0
	Value	2500	1500	0	0
	Total	500	500	-1000	0

Expected value of buying combined ticket =

$= 0.16 \times 700 + 0.24 \times -300 + 0.24 \times -1800 + 0.36 \times (-1800)$

$= -256$

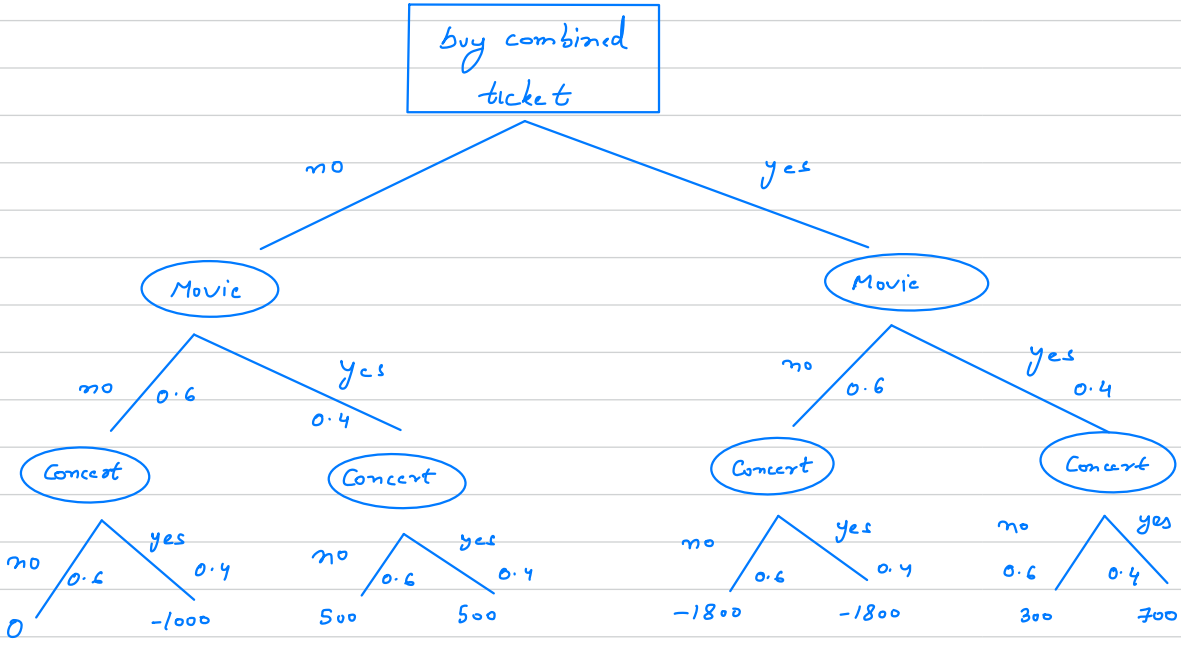
Expected value of buying single ticket =

$= 0.16 \times 500 + 0.24 \times 500 + 0.24 \times (-1000) + 0.36 \times 0$

$= -40$

⇒ We should buy single ticket

→ Decision Tree



→ Decision Network