TP02 SYAD

Exercise 1

Jenny is a writer of romance novels. A movie company and a TV network both want exclusive rights to one of her more popular works. If she signs with the TV network, she will receive a single lump sum, but if she signs with the movie company, the amount she will receive depends on the market response to her movie. What should she do?

Payouts and Probabilities

- Movie company Payouts
  - Small box office - $200,000
  - Medium box office - $1,000,000
  - Large box office - $3,000,000
- TV Network Payout : Flat rate - $900,000
- Probabilities
  - P(Small Box Office) = 0.3,
  - P(Medium Box Office) = 0.6,
  - P(Large Box Office) = 0.1

Use TreePlan, an add-in for Excel, to set up and solve decision tree problems.
TreePlan program consists of single Excel add-in file, TREEPLAN.XLA

Exercise 2

Given the payoff table, find the best alternative using Decision tree

Investment Choice (Alternatives)	Profit in $1,000's (States of Nature)		
	Strong Economy (.3)	Stable Economy (.5)	Weak Economy (.2)
Large factory	200	50	-120
Average factory	90	120	-30
Small factory	40	30	20

Exercise 3

Find the best alternative using Decision tree for the following problem

A firm can build a large plant or small plant initially (for a new product). Demand for the new product will be high or low initially.

The probability of high demand is 0.6. (The probability of low demand is 0.4.)
If they build "small" and demand is "low", the payoff is $40 million. If they build "small" and demand is "high", they can do nothing and payoff is $45 million, or they can expand. If they expand, there is a 30% chance the demand drops off and the payoff will be $35 million, and a 70% chance the demand grows and the payoff is $48 million.
If they build "large" and demand is "high", the payoff is $60 million. If they build "large" and demand is "low", they can do nothing and payoff is -$10 million, or they can reduce prices and payoff is $20 million. Determine the best decision(s) using a decision tree.