

14. Which of the following techniques is the most widely used decision-making criterion under risk?
- a. maximax criterion
 - b. minimax regret criterion
 - c. **expected value criterion**
 - d. Hurwicz criterion

(Medium)

15. A weighted average of decision outcomes in which each future state of nature is assigned a probability of occurrence is known as the
- a. Hurwicz criterion
 - b. minimax regret criterion
 - c. LaPlace (equal likelihood) criterion
 - d. **expected value criterion**

(Medium)

16. The maximum value of perfect information to the decision maker is known as
- a. **the expected value of perfect information**
 - b. the expected value of imperfect information
 - c. the minimum of the minimax regret
 - d. none of the above

(Easy)

17. A family business is considering making an investment in its manufacturing operation. Three decisions are under consideration: (1) a large investment; (2) a medium investment; and (3) a small investment. The business believes that there are three possible future outcomes for its product: (1) increasing demand; (2) stable demand; and (3) decreasing demand. The following payoff table describes the decision situation.

States of Nature			
Decision	Increasing Demand	Stable Demand	Decreasing Demand
Large Investment	\$1,000,000	\$400,000	-\$600,000
Medium Investment	500,000	300,000	-200,000
Small Investment	250,000	125,000	25,000

The best decision for the business using the maximax criterion would be to

- a. **make the large investment**
- b. make the medium investment
- c. make the small investment
- d. choose increasing demand

(Medium)

22. A family business is considering making an investment in its manufacturing operation. Three decisions are under consideration: (1) a large investment; (2) a medium investment; and (3) a small investment. The business believes that there are three possible future outcomes for its product: (1) increasing demand; (2) stable demand; and (3) decreasing demand. The business believes that the probability for increasing, stable and decreasing product demand are 0.4, 0.5, and 0.1, respectively. The following payoff table describes the decision situation.

Decision	States of Nature		
	Increasing Demand (0.4)	Stable Demand (0.5)	Decreasing Demand (0.1)
Large Investment	\$1,000,000	\$400,000	-\$600,000
Medium Investment	500,000	300,000	-200,000
Small Investment	250,000	125,000	25,000

The expected value for the large investment decision is

- a. \$700,000
- b. \$540,000**
- c. \$330,000
- d. \$165,000

(Medium)

23. A family business is considering making an investment in its manufacturing operation. Three decisions are under consideration: (1) a large investment; (2) a medium investment; and (3) a small investment. The business believes that there are three possible future outcomes for its product: (1) increasing demand; (2) stable demand; and (3) decreasing demand. The business believes that the probability for increasing, stable and decreasing product demand are 0.4, 0.5, and 0.1, respectively. The following payoff table describes the decision situation.

Decision	States of Nature		
	Increasing Demand (0.4)	Stable Demand (0.5)	Decreasing Demand (0.1)
Large Investment	\$1,000,000	\$400,000	-\$600,000
Medium Investment	500,000	300,000	-200,000
Small Investment	250,000	125,000	25,000

The expected value for the small investment decision is

- a. \$540,000
- b. \$400,000
- c. \$330,000
- d. \$165,000**

(Medium)