

1. In a proposed business venture, a businesswoman estimates there is a 65% chance she will make \$65,000 and a 35% chance she will lose \$57,000. Determine her expected value. Her expected value is \$\_\_\_\_\_.
  
2. Shenise is a star player for her women's basketball team. She has injured her ankle, and it is doubtful that she will be able to play in an upcoming game. If Shenise can play, the coach estimates that the team will score  $x$  points. If Shenise is not able to play, the coach estimates that they will score  $y$  points. The team doctor estimates that there is a  $p$ % chance Shenise will play. Determine the number of points the team can expect to score. It is expected that the team will score \_\_\_\_\_ points.
  
3. The Triple L investment club is considering purchasing a certain stock. After considerable research, the club members determine that there is a 60% chance of making \$9000, a 10% chance of breaking even, and a 30% chance of losing \$6000. Find the expectation of this purchase. The expected value is \$\_\_\_\_\_.
  
4. The expected value when you purchase a lottery ticket is -\$1.00 and the cost of the ticket is \$7.00. Determine the fair price of the lottery ticket. The fair price is \$\_\_\_\_\_.
  
5. Use the following statement to answer parts a) and b). Two hundred raffle tickets are sold for \$3 each. One prize of \$200 is to be awarded. Winners do not have their ticket costs of \$3 refunded to them. Raul purchases one ticket.
  - a.) Determine his expected value. \$\_\_\_\_\_
  - b.) Determine the fair price of a ticket. \$\_\_\_\_\_

6. 260 individuals are asked which evening news they watch most often. The results are shown to the right. If one of these individuals is selected at random, find the probability that the person watches ABN or NBS, given that the individual is a man.

Viewers	ABN	NBS	SBC	Other	Total
Men	40	10	40	60	150
Women	40	5	20	45	110
<b>Total</b>	<b>80</b>	<b>15</b>	<b>60</b>	<b>105</b>	<b>260</b>

$P(\text{ABN or NBS} \mid \text{man}) = \underline{\hspace{2cm}}$

7. A quality control inspector is checking a sample of lightbulbs for defects. The table summarizes the results. If one of these lightbulbs is selected at random, find the probability that the lightbulb is defective.

Wattage	Good	Defective	Total
20	61	7	68
50	67	6	73
100	79	13	92
Total	207	26	233

$P(\text{lightbulb is defective}) = \underline{\hspace{2cm}}$

8. Sales representatives at a car dealership were split into two groups. One group used an aggressive approach to sell a customer a new automobile. The other group used a passive approach. The following table summarizes the records for 660 customers.

Approach	Sale	No Sale	Total
Aggressive	110	230	340
Passive	225	95	320
Total	335	325	660

If one of these customers is selected at random, determine the probability of a sale, given that the aggressive approach was used. The probability of a sale, given that the aggressive approach was used, is  $\underline{\hspace{2cm}}$ .

9. A person randomly selects one of four envelopes. Each envelope contains a check that the person gets to keep. However, before the person can select an envelope, he or she must pay \$15 to play. Determine the person's expectation if the checks in the envelopes are for \$0, \$4, \$5, and \$18. The expected value is \$  $\underline{\hspace{2cm}}$ .
10. An airline is planning its staffing needs for the next year. If a new route is approved, it will hire 814 new employees. If a new route is not granted, it will hire only 197 new employees. If the probability that a new route will be granted is 0.37, what is the expected number of new employees to be hired by the airline?  $\underline{\hspace{2cm}}$
11. The owner of an antique store estimates that there is a 20% chance she will make \$800 when she sells an antique china cabinet, a 40% chance she will make \$300 when she sells the cabinet, and a 40% chance she will break even when she sells the cabinet. Determine the expected gain or loss for the store. The expected gain or loss for the store is \$  $\underline{\hspace{2cm}}$ .
12. Fill in the blank. If  $n(E1 \text{ and } E2) = 2$  and  $n(E1) = 14$ , then  $P(E2|E1) = \underline{\hspace{2cm}}$ .