AP Stats
Chap 15 – Handout #2 Name _____

Show all necessary work and place your answers on the spaces provided.
Probabilities may be left as a reduced fraction or a decimal to THREE places.

Find the indicated probability. (One final question from Chapter 15!)

1. A certain type of DVD player is sold at two stores. 42% of the sales are from store A and 58% of the sales are from store B. 3.2% of the DVD players sold at store A are defective while 4.9% of the DVD players sold at store B are defective. If Kate receives one of these DVD players as a gift and finds that it is defective, what is the probability that it came from store A? 1. _____

Create a probability model for the random variable.

2. You roll a pair of fair dice. If you get a sum greater than 10 you win $60. If you get a double you win $10. If you get a double and a sum greater than 10 you win $70. Otherwise you win nothing. Create a probability model for the amount you win at this game.

Find the expected value (EV) and the SD of each of the following.

3. The probability model below describes the number of thunderstorms that a certain town may experience during the month of August. Find the values for the number of storms the town will get in August. 3. EV - _____ SD - _____

Number of Storms	0	1	2	3
Probability	0.2	0.2	0.4	0.2

4. You pick a card from a deck. If you get a face card, you win $5. If you get an ace, you win $30 plus an extra $60 for the ace of hearts. For any other card you win nothing. Find the values for the amount you will win. 4. EV - _____ SD - _____

5. A company bids on two contracts. It anticipates a profit of $50,000 if it gets the larger contract and a profit of $20,000 if it gets the smaller contract. It estimates that there's a 30% chance of winning the larger contract and a 50% chance of winning the smaller contract. Find the values for the company's profit assuming that the contracts will be awarded independently. 5. EV - _____ SD - _____

6. The MC womens' soccer team will play two games against State College this season. The probability that MC wins the first game is 0.3. If MC wins the first game, the probability that they also win the second game is 0.7. If MC loses the first game, the probability that they will win the second game is 0.3. Find the values for the number of games MC will win. 6. EV - _____ SD - _____

7. Given independent random variables with means and standard deviations as shown, find the values of the variables 0.3Y.

	Mean	SD
X	50	6
Y	60	4

7. EV - _____

SD - _____

8. Given independent random variables with means and standard deviations as shown, find the values of the variables Y - 6.

	Mean	SD
X	260	26
Y	270	27

8. EV - _____

SD - _____

9. Given independent random variables with means and standard deviations as shown, find the values of the variables 3X + 15.

	Mean	SD
X	110	9
Y	90	8

9. EV - _____

SD - _____

10. Miguel buys a large bottle and a small bottle of juice. The amount of juice that the manufacturer puts in the large bottle is a random variable with mean of 1016 ml and a standard deviation of 8 ml. The amount of juice that the manufacturer puts in the small bottle is also a random variable with a mean of 510 ml and a standard deviation of 5 ml. Find the values of the amount of juice in the two bottles.

10. EV - _____

SD - _____

11. At a furniture factory, tables must be assembled, finished, and packaged before they can be shipped to stores. Based on past experience, the manager finds that the means and standard deviations (in minutes) of the times for each phase of the process are as shown in the table:

	Mean	SD
Assembly	26.8	2.6
Finishing	35.7	3.1
Packaging	15.1	2.4

Find the values of the total time to prepare a table for shipping, assuming that the times for each phase are independent.

11. EV - _____

SD - _____

Find the indicated probability and show your work.

12. Back to Miguel and the bottles of juice in the question above. If the total amount of the juice in the two bottles can be described by a normal model, what is the probability that the total amount of juice in the two bottles is more than 1540.2 ml?

12. _____