**Lab for Section 12.6** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. State your solutions to problems in complete sentences.*

1. 0.4% of 379 2. 

3. Assume *A* and *B* are events in *S* such that 

 (a) 

 (b) Are events *A* and *B* mutually exclusive events? Explain.

4. If the probability that you will win a door prize at a certain event is , what is the probability that you will not win a door prize?

5. A deck contains twelve cards. Four are blue, four are green, and four are yellow. Of the four cards of the same color, there is one with a horse, one with a cow, one with a chicken, and one with a duck.

 (a) What is the probability that you draw (b) What is the probability that you draw

 a yellow card or a duck card? a blue card or a card with a mammal on it?

 (c) What is the probability that you do (d) What is the probability that you draw

 not draw a card with a mammal on it? a card with a cow and a chicken on it?

6. A bag contains five red balls, four green balls, and three yellow balls.

 (a) Find the probability of drawing in order a red ball, a green ball, and last a red ball.

 (i) With replacement. (ii) Without replacement.

(b) Find the probability of drawing in order three consecutive green balls or three consecutive yellow balls.

 (i) With replacement. (ii) Without replacement.

7. Bob is playing a slot machine at a casino. The probability of getting a 7 on any wheel is . There are four wheels on the machine he is playing.

(a) What is the probability of getting (b) As Bob watches, the first three wheels come up 7’s.

 all 7’s? What is the probability the last one will land on 7?

(c) What is the probability of getting (d) Are the wheels independent or dependent?

 no 7’s?

8. Suppose you were given one of thirty free tickets at the beginning of this class session. Suppose at the end of this period (just dreaming) three tickets are drawn without replacement. The first ticket drawn wins $100, the second ticket wins $50, and the third ticket wins $30.

 (a) Determine your expected winnings.

 (b) If your neighbor offered to buy your ticket before the drawing, what would be a “fair” price?

 (c) Repeat part (a) if the tickets were drawn with replacement.