STATISTICS 1040   Name _____

Quiz 5, Fall 2014   **Recitation Instructor** _____Time_____

1. Two draws are made from the following box containing blue and white tickets.

[B , B , B , W , W , W , W]

a) If the draws are made with replacement, find the probability that at least one white ticket is drawn. (2 points)

$$1 - \frac{3}{7} \cdot \frac{3}{7} = \frac{40}{49}$$

b) If the draws are made without replacement, find the probability that at least one white ticket is drawn. (2 points)

$$1 - \frac{3}{7} \cdot \frac{2}{6} = \frac{6}{7}$$

2. One ticket will be drawn from each of the two boxes shown below.

Box A : [5 , 6 , 7 , 8]   Box B : [6 , 7 , 8 , 9]

Find the probability that the sum of the two numbers is greater than or equal to 14. (2 points)

List the ways : $(5,6)\ (5,7)\ \ (5,8)\ (5,9)$

$(6,6)\ (6,7)\ (6,8)\ (6,9)$

$(7,6)\ (7,7)\ (7,8)\ (7,9)$

$(8,6)\ (8,7)\ \ (8,8)\ (8,9)$ $\frac{10}{16} = \frac{5}{8}$

3. A department store runs a promotion where every customer independently draws a *scratch and win* ticket. Suppose that 40% of the tickets are *winners* and you visit the store twice during the promotion.

a) What is the chance that you get a *winner* on both visits? (2 points)

$.4 \times .4 = .16$

b) What is the chance that you get a *winner* on your first visit or a *winner* on your second visit? (2 points)

General Additon Rule : $.4 + .4 - (.4) \times (.4) = .64$