MAT 035, Quiz #9, Fall 2016   Name _____ KEY _____

Instructions: Show all work to receive full credit. You should note any formulas used or calculator functions used, their inputs and outputs. I cannot grade work if I don't know where an answer came from. Be sure complete all parts of each questions, including requests for interpretation and explanations. Be as thorough as possible.

1. The probability of an event is 45%. Describe a probability experiment that illustrates the **meaning** of this statement.

   if we conduct 1000 experiments we can expect that approximately 450 times we will get the desired outcome.
   $\left(\dfrac{450}{1000} = 45\%\right)$

2. A contingency table is shown below relating gender to type of degree program. Convert this table to a Venn diagram.

		STUDENT'S CHOICE		
		Art degree	Science degree	Total
GROUP	Boys	25	50	75
	Girls	55	20	75
	Total	80	70	150

$A = Boys \quad A^c = girls$

$B = Art\ Degree \quad B^c = science\ degree$

3. Evaluate.

   a. $_5P_3$

   b. $10C6$

   c. $\binom{15}{3}$

   d. $8!$

   60

   210

   455
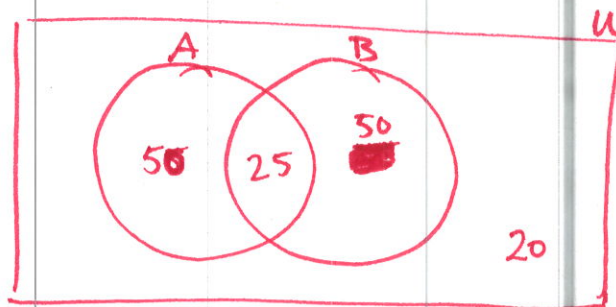
   40,320

4. How many different ways are there to flip 23 coins and obtain 16 heads?

   $23C16 = 245,157$

5. A baseball line-up is made up of 9 players in order. If there are 25 people on the team, what are the number of possible line-ups that can be made?

   $25P9 = 7.41 \times 10^{11}$ approx.

6. Solve $3x + 4 = 10$.

   $\underline{\quad -4 \;\; -4 \quad}$

   $3x = 6$

   $\boxed{x = 2}$