MATH 1025 Statistics
QUIZ #2
50 Points

Instructions: From the moment you opened this file, you have exactly **1 hour** to complete these problems. Write your work for each of the problems on sheets of paper. Do not copy the original problems—Just do the work (like homework). SHOW ALL WORK.

After 1 hour, you have up to 20 minutes to scan and upload all your work as a SINGLE PDF file in the Assignments DropBox Folder. No other format will be graded.

Remember: It is expected that you work on this alone with no outside assistance. You may use your Notes and your Homework.

Do not write answers on here. Write on separate sheets of paper and Show all Work.
Be complete. **Be sure to keep track of your time**. The PDF file with your work must be submitted within 20 minutes after the time is up. Set a timer for yourself.

#1 QUIZ Problem) In the state of Minnesota with a fairly large population, a recent study showed that 34% of the people got a flu shot/flu vaccination last year. Give 4 decimal place accuracy on answers.
  a) If one person in Minnesota is selected at random, what is the probability they did not get a flu shot last year?
  b) If 2 Minnesotans are selected at random, what is the probability that they both got the flu shot?
  c) If 4 people are randomly selected from across Minnesota, what is the probability that AT LEAST ONE of them got the flu shot?

#2 QUIZ Problem) In rural Texas, a recent study from the University of Austin showed that 84% of the houses need a new roof; 72% of the houses have trees in the yard; and 65% of the houses need a new roof and also have trees in the yard. If it needs a new roof, what is the **probability** that a particular house in Texas has trees in the yard ? Show your work very clearly on your PAPER. Round to 4 decimal place accuracy.

Continued Next Page....

#3 QUIZ Problem) The EPIC Corporation utilizes a training program to target employees that it hires and strategically place them into appropriate jobs within the company. The program consists of two steps, and each step has built-in quotas. Step I of the program identifies 40 % of the hirees as management trainees, 45 % as non-managerial trainees, and the rest will be fired. In Step II of the program, 75 % of the management trainees are assigned to managerial positions, 20 % are assigned to non-managerial positions, and the others are fired. Also, in Step II, half of the non-managerial trainees are retained as workers in the same category position, but the rest are fired. {SHOW ALL WORK on your paper.}

a)   Construct a **tree diagram** for this situation labeled with suitable probabilities. Be complete and organized.

b)   What is the **probability** that a randomly chosen hiree will have been fired by the end of the training period? ***Show your work***.

#4 QUIZ Problem) AMES Engineering Inc is a small engineering firm that works with NASA. According to human resources, there are 22 engineering team members at the firm including: 7 men, 14 women, plus the team supervisor is a woman named Lois Jordan. SHOW ALL WORK.

a) At AMES Engineering Inc, **in how many ways** can a 5-person committee be chosen from the entire engineering team to analyze a new project? Show your work.

b) If a 5-person committee is chosen at random at AMES Engineering, what is the **probability** that it contains 3 men and 2 women from the engineering team? You must show how you computed your answer. Give answer accurately to 4 decimal places.

c) If a 5-person committee is chosen at random from the engineering team, what is the **probability** that Lois Jordan is chosen as part of the committee? You must show how you computed your answer. Give answer accurately to 4 decimal places.

End of Quiz.