

Please sign the following agreement and hand this page in with the rest of your exam.

I, (print your name) _____, have completed this exam without the assistance or advice of any other person. I also did not assist any other student in this class with their own exam. I take academic integrity seriously and I know that if I violate this agreement I will receive an F in this course. I agree to this agreement for all take home tests that will be given.

(sign here) _____.

For each problem show your work and clearly indicate your answer.

1. A certain driver's license number begins with one of the letters A, D, G, or K and is followed by one of the digits 2, 3, or 4. List the elements of the sample space of the first two digits of this driver's license number.

2. A computer system can be configured using 1 of 3 processors of different speed, 1 of 4 disk drives of different sizes, 1 of 3 monitors, and 1 of 2 graphics cards. How many different computer systems are possible?

3. In a very simple computer chip, 10 wires go from one transistor to a second transistor. For the computer to function, instructions must be sent between these 2 transistors. In how many ways can 4 different instructions be sent between the 2 transistors if no 2 instructions can be sent along the same wire?

4. A matching test asks students to match 10 words with 15 definitions. Assuming each word corresponds to exactly 1 definition, how many different pairs are possible?

5. How many games are necessary in a softball league consisting of 8 teams if each team must play each of the other teams once?

6. A coin and a regular 6-sided die are tossed together once. What is the probability that the coin shows a head or the die has a 5 on the upward face?

7. What is the probability of drawing 2 cards in succession (without replacement) from a standard deck of playing cards and having them both be hearts?

8. Four cards are drawn from a standard deck of playing cards without replacement. What is the probability that none of them are 9s?

9. Three coins are tossed once. What is the probability that all of the coins show a heads?

10. The probability that a 19-year-old male in the United States will die within 1 year is approximately 0.001188. If an insurance company sells a 1-year, \$25,000 life insurance policy to a 19-year-old male for \$795, what is the company's expectation?

11. A software company is preparing a bid to create a new inventory program for an auto parts company. The software company estimates the probabilities of potential profit (or loss) as shown in the table below. What is the profit expectation for the company?

Profit / loss	Probability
\$75,000	0.18
\$50,000	0.36
\$25,000	0.31
\$0	0.08
-\$10,000	0.05
-\$20,000	0.02

12. Five cards are drawn from a standard deck of playing cards without replacement. What is the probability that the cards form a Royal Flush?

13. Five cards are drawn from a standard deck of playing cards without replacement. What is the probability that the cards result in three of a kind?

14. Five cards are drawn from a standard deck of playing cards without replacement. What is the probability that the cards form a full house?