

Practice for Exam 1

Math 361

1. Suppose that a company buys items from three suppliers, I, II, and III. The record is that 2% of the items from supplier I are defective, 3% of the items from supplier II are defective, and 5% of the items from supplier III are defective. Suppose 20%, 30%, and 50% of the current supply came from Suppliers I, II, and III, respectively.

(A) If an item is selected at random from this supply, what is the probability that it is defective?

(B) If a randomly selected item is defective, what is the probability that it came from supplier III.

2. The following number of goals recorded for a soccer team in a season was:

1, 0, 0, 0, 1, 1, 3, 3, 1, 1, 2, 4, 4, 4, 1, 1, 1, 2, 6, 4, 7, 5, 5, 5, 0, 0, 0, 0, 9.

(A) Create a frequency histogram for the number of soccer goals. Make sure you specify how you select the base of the rectangles in the histogram.

(B) Describe the shape of the histogram

(C) The five number summary is given to be:

Min. *1stQu.* *Median* *Mean* *3rdQu.* *Max.*

0.000 1.000 1.000 2.448 4.000 9.000

Determine if there are outliers and if there are, find them.

3. A hand of 8 cards is dealt from a deck of 52 cards.

(A) How many hands with at most 5 diamonds are possible?

(B) What is the probability that the hand has 2 diamonds and 6 black cards?

4. Suppose a fair coin is tossed 4 times.

(A) What is the probability that there are exactly 3 heads?

(B) Given that heads occurs on the first 3 tosses, what is the conditional probability that heads occurs on the 4th toss?

5. In a U of A class of 30 students, 11 read Arizona Daily Wildcat, 9 read Arizona Daily Star, and 13 read at least one of these newspapers. A randomly selected student is asked whether he or she reads Arizona Daily Wildcat or Arizona Daily Star.

Determine the probability that the selected student

(A) reads both Arizona Daily Wildcat and Arizona Daily Star.

(B) reads only Arizona Daily Wildcat.

(C) reads Arizona Daily Wildcat or Arizona Daily Star, but not both.

6. Suppose a box contains two coins, of which one is two-headed and one is fair. If the coin is tossed n times and it yields n heads, what is the probability that the two-headed coin was selected?