

Math 221: Basic Statistics Exam # 2A

Week #10

Name: _____

INSTRUCTIONS: You may use a calculator for this exam and a letter-sized study sheet with information written on a single side.

- (2) Use the previous problem's table to answer the following questions regarding **conditional probability**.
- (a) What is the probability that a random person was satisfied with their shopping experience **GIVEN** that they received the product in time for the holidays?
- (b) What is the probability that a random person did NOT receive the product in time for the holidays **GIVEN** that they were NOT satisfied with their shopping experience?
- (c) Are the events $A = \text{"satisfied with shopping online"}$ and $B = \text{"received the product on time"}$ **dependent** or **independent**?

(4) Warranty records indicate that the probability that a new car needs a warranty

- (5) The number of claims for missing baggage for a well-known airline in a small city averages 9.9 per day. Assume that the number of claims per day follows a **Poisson distribution**. What is the probability that
- (a) on a given day there will be **exactly 9** claims made?

- (6) During a promotional contest, a soft drink company places winning caps on one of every six bottles. (*Hint*: Use the **geometric distribution**!) If you purchase one bottle a day,
- (a) what is the probability that you find your first winning cap on the four day?

(b) What is the probability that you find your first winning cap at some point after three days?

(c) What should you expect to happen after three days?

(7) Find the indicated probabilities for the standard normal distribution Z .

(a) $P(Z < 1.13)$

(b) $P(Z > 0.34)$