

## AP Stats

### Chap 16 Handout

Name \_\_\_\_\_ Pd \_\_\_\_\_

**Show all necessary work and place your answers on the spaces provided.**

#### *Type B Blood.*

The American Red Cross says that about 11% of the US population has Type B blood. A blood drive is being held at your school.

1. How many blood donors should the Red Cross expect to collect from until it gets a donor with Type B blood? 1. \_\_\_\_\_
2. What is the probability that the tenth blood donor is the first donor with Type B blood? 2. \_\_\_\_\_
3. What is the probability that exactly two of the first 20 blood donors have Type B blood? 3. \_\_\_\_\_
4. What is the probability that at least two of the first 10 blood donors have Type B blood? 4. \_\_\_\_\_
5. The blood drive has a total of 150 donors. Assuming this is a typical number of donors for a school blood drive, what would be the mean and standard deviation of the number of donors who have Type B blood?  
5.  $\mu =$  \_\_\_\_\_  
 $\sigma =$  \_\_\_\_\_
6. Surprised by the low number of Type B blood donors at the blood drive, the Red Cross wonders if the 11% estimate was too high for the Sterling area. How many Type B blood donors would it take to convince you that this estimate might be too high? Justify your answer!

***Pet Clothes.***

The owner of a pet store is trying to decide whether to discontinue selling specialty clothes for pets. She suspects that only 4% of the customers buy specialty clothes for their pets and thinks that she might be able to replace the clothes with more interesting and profitable items on the shelves. Before making a final decision she decides to keep track of the total number of customers for a day, and whether they purchase specialty clothes for their pets.

7. Assuming the pet store owner is correct in thinking that only 4% of her customers purchase specialty clothes for their pets, how many customers should she expect before someone buys a garment for their pet? 7. \_\_\_\_\_
8. What is the probability that she does not sell a garment until the seventh customer? 8. \_\_\_\_\_
9. What is the probability that exactly three of the first 10 customers buy specialty clothes for their pets? 9. \_\_\_\_\_
10. What is the probability that at least three of the first 40 customers buy specialty clothes for their pet? 10. \_\_\_\_\_
11. The owner had 275 customers that day. Assuming this was a typical day for her store, what would be the mean and standard deviation of the number of customers who buy specialty clothes for their pet each day?  
 $\mu =$  \_\_\_\_\_  
 $\sigma =$  \_\_\_\_\_
12. Surprised by a high number of customers who purchased specialty clothing that day, the owner decided that the 4% estimate must have been too low. How many clothing sales would it have taken to convince you? Justify your answer!