

**Honors Statistics**  
**4-3: Binomial Distributions**  
**Worksheet #2**

Name \_\_\_\_\_  
Period \_\_\_\_\_ Date \_\_\_\_\_

- 1. Suppose a computer chip rejects 2% of the chips produced because they fail pre-sale testing. 10 chips are randomly selected. What's the probability that you find**
  - a. no defective chips
  - b. at least one defective chip?
  - c. more than two defective chips?
  - d. at most two defective chips?
  - e. at least five defective chips?
  
- 2. Assume that 13% of people are left handed. If we select 5 people at random, find the probability of each outcome described below.**
  - a. There is at least one lefty in the group.
  - b. There are exactly 3 lefties in the group.
  - c. There are at least 3 lefties in the group.
  - d. There are no more than 3 lefties in the group.
  
- 3. Only 4% of people have Type AB blood. What's the probability that there is**
  - a. no type AB donors among the first 5 people checked?
  - b. at least one type AB donor among the first 5 people checked?
  - c. at most two type AB donors among the first 5 people checked?
  - d. at most three type AB donors among the first 5 people checked?
  - e. exactly one type AB donor among the first 5 people checked?
  
- 4. An Olympic archer is able to hit the bull's eye 80% of the time. Assume each shot is independent of the others. If she shoots 6 arrows, what's the probability of each result described below.**
  - a. She gets exactly 4 bull's eyes.
  - b. She gets at least 4 bull's eyes.
  - c. She gets at most 4 bull's eyes.
  - d. She misses the bull's eye at least once.
  - e. She misses the bull's eye exactly 4 times.
  - f. She misses the bull's eye more than 2 times.
  
- 5. The IRS estimates that 8%. If all taxpayers filling out long forms make mistakes. Suppose a random sample of 20 forms is selected. Find the probability that**
  - a. no forms have a mistake.
  - b. at least one form has a mistake.
  - c. more than 5 forms have mistakes.
  - d. less than 6 forms have mistakes.
  - e. there are at least 15 forms with NO mistakes.

