

**22S:25 HW Supplement 9**

Name \_\_\_\_\_ Sec \_\_\_\_\_

**Directions:** For each problem, show the necessary work and indicate clearly your answer.  
(Note that HW Supp 9 is similar to worksheet #17.)

1. On a certain biased coin, heads is twice as likely as tails. That is,  $P(H) = 2/3$ .

a) the **expected number** of heads in 900 tosses = \_\_\_\_\_

b) the **standard error for the number** of heads in 900 tosses = \_\_\_\_\_

c) the **expected percentage** of heads in 900 tosses = \_\_\_\_\_

d) the **standard error for the percentage** of heads in 900 tosses = \_\_\_\_\_

2. 30% of the students at City University have completed a statistics course. Estimate the probability that in a simple random sample of 256 City University students, more than 35% have completed a statistics course.

Estimate the probability if the sample size is increased to 1024.

3. Suppose that 10% of the students at a large university are left-handed. A simple random sample of 225 students is taken. Use a normal curve to estimate the probability that over 12% of the students in the sample are left-handed.

4. A box contains 50 red marbles and 50 blue marbles. 100 marbles are drawn, at random. Find the **standard error for the percentage** of red marbles drawn if the draws are made

a) **with replacement**

b) **without replacement**