Names: _____ _____ _____

Activity #7: Sampling Distributions **Statistics**

1. Plain M&M candies have a mean mass of 0.8565 g with standard deviation 0.0518 g. A selected bag of M&Ms was found to contain 465 candies and have a claimed mass of 396.9 g. We may assume that the masses of M&Ms are normally distributed.

   (a) If one M&M is selected, find the probability that its mass is greater than 0.8535 g.

   (b) If 465 M&Ms are selected, find the probability that their mean weight is greater than 0.8535 g. (Hint: Use a sampling distribution.)

2. There is an 80% chance that a prospective employer will check the educational background of a job applicant. 64 job applications are randomly selected. Find the probability that at least 50 of the applicants will have their educational backgrounds checked. (Hint: use a sampling distribution of sample proportions.)

3. The weights of adult men are normally distributed with mean 182.9 lb and standard deviation 40.8 lb. The Bombardier Dash 8 is a small aircraft capable of carrying 37 passengers with a weight capacity of 6200 lb. If this plane is loaded to capacity with adult male passengers, what is the probability that their mean weight exceeds 6200 lb/37 = 167.6 lb?