Name _____ **Date** _____ **Period**_____

Ch. 6 Integrated Math 3B Homework Week of April 9, 2018

6-54. A copy machine company advertises that its copiers will make at least 25,000 copies before requiring maintenance. A consumer research group tested the claim by collecting repair data for that model of copy machine in 40 different regions of the country. The means of the numbers of copies made before the copier needed maintenance for each of the 40 regions have been sorted and are listed in the table below. Homework Help ✎

24551	24656	24764	24889	24928
24574	24656	24767	24893	25020
24600	24691	24782	24895	25024
24609	24705	24791	24904	25025
24612	24717	24793	24910	25028
24615	24725	24796	24911	25033
24618	24735	24798	24914	25041
24652	24758	24883	24928	25249
				checksum 992,440

What are the upper and lower 5% bounds of the sample-to-sample variability? Predict the number of copies that can be made before a machine requires maintenance. Do you think the consumer research group will dispute the company's claim?

6-55. Students in Miss Hampton's science class are testing the effectiveness of detergent in getting dishes clean. They start by weighing each plate. Then they create a gooey paste of hard-to-clean foods (spaghetti sauce, mustard, mashed potatoes, peanut butter, and grape jelly) and smear 250 clean dinner plates with a measured amount of the food paste. They weigh each plate and randomly place them into commercial dishwashers. Half the dishwashers have detergent in them, and half have only clean water. After cleaning the dishes, they weigh each plate to determine the portion of food paste that remains. 84% of the food is removed from dishes cleaned with detergent, while only 72% of the food is removed from dishes cleaned without detergent. Does using detergent really help get dishes cleaner? Homework Help ✎

a. What is the difference in the proportions (detergent minus plain water)? Express your answer as a decimal.

b. Mrs. Hampton's class runs a computer simulation and determines the sample-to-sample variability of the *difference* between the proportion of food removed by the detergent compared to plain water. They conclude that the *difference* in the true proportion of food removed is 0.12 ± 0.085.

   Is a difference of zero a plausible result considering their margin of error? What does a difference of zero mean in the context of this problem?

c. Are you convinced that there is a true difference between cleaning with detergent and cleaning with plain water?