FRQ #2 Modified 2007 AP Statistics – Answer Key

1. The probability that a randomly selected strawberry from the treatment group has a discoloration value less than seven is 19/25 = .76
2. The standard deviation of 2.141 measures a typical distance between the individual discoloration ratings and the mean discoloration rating for the strawberries in the control group.
3. The preservative does seem to have been effective in lowering the discoloration in strawberries. The strawberries in the treatment group are centered at a lower value/rating than those in the control group. The mean/median values in the treatment group appear to be lower/smaller than in the control group.
4. Random = the 50 strawberries were randomly assigned to the two groups as stated in the stem of the problem.

Pop > 10n It is reasonable to assume there are more than 50 \* 10 = 500 ripe strawberries in this population (farm)

n>30 we don’t quite meet this rule of thumb number but there is no strong skewness in either sample distribution, both distributions look approximately normal and it appears there are no outliers in either distribution, so this condition is met.

1. Since zero is not contained in the 95% CI for the difference in means, we can conclude that there is a significant difference between the mean ratings for the two groups at the $∝$ = .05 level. We think there would be a difference in population mean discoloration ratings for the treated and untreated strawberries. The population mean discoloration rating for the untreated strawberries is estimated to be between .160 and 2.72 units higher than the population mean discoloration rating for the treated strawberries.