



## “FRAPPY” {Free Response AP Problem...Yay!}

The following problem is taken from an actual Advanced Placement Statistics Examination. Your task is to generate a complete, concise statistical response in 15 minutes. You will be graded based on the AP rubric and will earn a score of 0-4. After grading, keep this problem in your binder for your AP Exam preparation.

A company bakes computer chips in two ovens, oven A and oven B. The chips are randomly assigned to an oven and hundreds of chips are baked each hour. The percentage of defective chips coming from these ovens for each hour of production throughout a day is shown below.

Percentage of Defective Chips

Hour	Oven A	Oven B
1	45	36
2	32	37
3	34	33
4	31	34
5	35	33
6	37	32
7	31	33
8	30	30
9	27	24

The percentage of defective chips produced each hour by oven A has a mean of 33.56 and a standard deviation of 5.20. The percentage of defective chips produced each hour by oven B has a mean of 32.44 and a standard deviation of 3.78. The hourly differences in percentages for oven A minus oven B have a mean of 1.11 and a standard deviation of 4.28.

Does there appear to be a difference between oven A and oven B with respect to the mean percentages of defective chips produced? Give appropriate statistical evidence to support your answer.

**Total: \_\_/4**