

ANOVA - PRACTICE

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10:02

Q. A study compared the effects of four 1-month point-of-purchase promotions on sales. The unit sales for five stores using all four promotions in different months follow.

Free sample 78 87 81 89 85

One-pack gift 94 91 87 90 88

Cents off 73 78 69 83 76

Refund by mail 79 83 78 69 81

- (a) Compute the mean unit sales for each promotion and then determine the grand mean.
- (b) Estimate the population variance using the between-column variance.
- (c) Estimate the population variance using the within-column variance computed from the variance within the samples.
- (d) Calculate the F ratio. At the 0.01 level of significance, do the promotions produce different effects on sales?