**Introduction to Factorial ANOVA Calculations**

Hyperactivity in children usually is treated by counseling, by drugs, or by both. The following data are from an experiment designed to evaluate the effectiveness of these different treatments. The dependent variable is a measure of attention span (how long each child was able to concentrate on a specific task).

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| --- | --- | --- |
|  | **Drug (b1)** | **No drug (b2)** |
| **Counseling (a1)** | *n* = 10  *T* = 140 *SS* = 40 *M* = 14 | *n* = 10  T = 80 SS = 36 *M* = 8 |
| **No Counseling (a2)** | n = 10 T = 120 SS = 45 *M* = 12 | n = 10 T = 100 SS = 59 *M* = 10 |

 *N* = 40 *G* = 440

*Please complete the following questions on notebook paper.*

1) Calculate an ANOVA with alpha = .05 to evaluate these data.

1. Display the ANOVA results in an ANOVA summary table.
2. For each significant effect, please calculate effect size.

4) Sketch a graph of the interaction. Then describe the interaction in words.

5) Follow up on the significant interaction by testing the simple main effects of *b* at each level of *a.*