-the-                                                                    a supplement for Chapter 7 of your textbook.

The columns in the experimental designs shown in your textbook provide a convenient way to do ANOM and ANOVA calculations.  In particular, they let you determine the average values for each level, the sum of squares, and the degrees of freedom for whatever (factor, i
present in the column.

| 7 | empty | error | 47.12 | 2 |
| 8 | empty | error | 3.44 | 2 |

| | | | |
|---|---|---:|---:|
| 5 | V | 8.19 | 2 |
| 6 | $S_V$ | 10.48 | 2 |
| 7 | empty    error | 47.12 | 2 |
| 8 | empty    error | 3.44 | 2 |
| Not in a column | error | 118.49 | 2 |
| Total | | 5492.12 | 17 |

D) Finally, to produce the ANOVA table, we add those values that we will be used for the error
s the
result.

| Source | SS | DOF | | MS | F | $F_{cr}$ (95%) |
|---|---|---|---|---|---|---|
| P | 1292.78 | | 1 | | | |

| | | | | | |
|---|---|---|---|---|---|
| $I_H$ | 23.24 | 2 | 11.62 | 0.9 | 6.94 |
| $P$ | 228.89 | 2 | 114.44 | 9.1 | 6.94 |
| V | 8.19 | 2 | 4.09 | 0.3 | 6.94 |
| $S_V$ | 10.48 | 2 | 5.24 | 0.4 | 6.94 |
| $P \times I_P$ | 118.49 | 2 | 54.25 | 4.3 | 6.94 |
| error | 50.56 | 4 | 12.64 | - | - |
| Total | 5492.12 | 17 | | | |

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Total minus the sum of the values form all of the columns, as illustrated in the table below:

|  | SS | DOF |
|---|---|---|
| Total | 28.31 | 15 |
| Sum of all columns (1-5) | 22.13 | 8 |
|  | 6.18 | 7 |

Example 4: A simple numerical example illustrating the calculations in detail.

      To demonstrate the individual calculations, we will use a small design with easy integer values of the characteristic response.  Assume that we use a  9TC design to test three 3-level factors (A, B, C) and one 2-level factor (Dfne 2