

Discussion Group Questions

1. (10 points). In class, we discussed the *file drawer problem*. Consider the following scenario. You read a “natural health newsletter,” and it describes how two randomly selected experimental and control groups of bodybuilders received either chromium picolinate supplement or a placebo in a “double blind study.” The body builders who received the chromium supplement gained 5 pounds more muscle during a 3 month period than those receiving the placebo.

Describe, in a short paragraph, how and why the *file drawer problem* might be an issue in interpreting the above result.

2. (4 points) In the following table,

X	Y
1	1
3	1
3	3
2	2
2	4

Identify

a) X_2

b) Y_4

3. (16 points)

Using the same table as question 2, compute the following quantities:

a) $\sum_{i=1}^5 X_i$	e) $\sum_{i=1}^5 \left(\frac{X_i}{Y_i} \right)$
b) $\sum_{i=1}^5 X_i^2$	f) $\sum_{i=1}^3 (X_i - 3)$
c) $\left(\sum_{i=1}^3 Y_i \right)^2$	g) $\sum_{i=1}^5 (Y_i - i)$
d) $\sum_{i=1}^5 (X_i - Y_i)$	h) $\sum_{i=1}^5 i^2$

4. (10 points) In the following 2 dimensional array of $X_{i,j}$ values:

1	21
3	51
5	33
7	16
9	11

- a) Evaluate $X_{2,2}$ b) Evaluate $X_{4,1}$ c) Evaluate $X_{4,1} + X_{5,2}$
d) Give the location of the number 11 in double subscript notation
e) Give the location of the number 33 in double subscript notation

5) (5 points) In class, Professor Steiger explained why the sum of the integers from 1 to N is given by

$$\sum_{i=1}^N i = \frac{N(N+1)}{2}$$

Using this result and the first constant rule of summation algebra, show that

$$\sum_{i=1}^{100} (i+5) = 5550$$

6) (5 points) Using summation algebra, simplify the following expression

$$\sum_{i=1}^{10} (5X_i - 16X_i^2 + i + 5)$$