

## Television Hours

Imagine an EV of TV watching -- the amount of TV watched on a typical day by 100 individuals. We can see what happens to this EV if we randomly choose individuals and randomly assign them to two conditions of an experiment.

(Ordinarily we would not follow what happens to an EV as we randomly assign subjects. We do this here just to make the effects of randomization visible.)

Throughout this handout, distinguish between the individual identifying number (ID), which is used in selecting individuals at random, and the data (TV), which is TV watching in hours. Random numbers are used to select individuals on the basis of their identifying numbers. The corresponding TV hours (the data) are then averaged. (Note: the mean for the entire set of numbers is 5.5).

ID	TV	ID	TV	ID	TV
1.	3	38.	1	75.	2
2.	3	39.	2	76.	3
3.	2	40.	1	77.	9
4.	3	41.	8	78.	5
5.	10	42.	8	79.	7
6.	5	43.	9	80.	2
7.	8	44.	9	81.	2
8.	4	45.	2	82.	5
9.	6	46.	7	83.	10
10.	1	47.	9	84.	5
11.	1	48.	2	85.	4
12.	2	49.	9	86.	4
13.	9	50.	7	87.	2
14.	6	51.	3	88.	3
15.	10	52.	9	89.	5
16.	4	53.	3	90.	7
17.	5	54.	4	91.	6
18.	4	55.	3	92.	1
19.	10	56.	4	93.	1
20.	8	57.	5	94.	8
21.	5	58.	3	95.	1
22.	4	59.	2	96.	9
23.	6	60.	8	97.	6
24.	6	61.	4	98.	6
25.	5	62.	6	99.	8
26.	9	63.	1	100.	7
27.	10	64.	8		
28.	3	65.	9		
29.	8	66.	7		
30.	6	67.	5		
31.	10	68.	1		
32.	7	69.	4		
33.	8	70.	7		
34.	6	71.	10		
35.	10	72.	7		
36.	10	73.	7		
37.	1	74.	10		

**Data Sheet 1**

Draw 10 individuals at random and record their identifying (ID) numbers below. Then **randomly** divide the set into two groups (Group X and Group Y) and record their ID numbers and daily TV hours.

Random Sample of Individuals (record identifying number):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Group X:  
ID TV

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Group Y:  
ID TV

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calculate the following statistics for the TV DATA, not the ID number:

$$\bar{X}_{1-5} =$$

$$\bar{Y}_{6-10} =$$

$$\bar{X} - \bar{Y} =$$

Note: In drawing a random sample, use "sampling without replacement" (don't choose a particular individual more than once).

**Data Sheet #2**

Repeat the procedure of Data Sheet #1, but this time randomly choose thirty individuals and divide them at random into two groups of 15.

Random Sample of individuals (record ID number):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Group X:  
ID      TV

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Group Y:  
ID      TV

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

$\bar{X}_{1-15} =$

$\bar{Y}_{16-30} =$

$\bar{X} - \bar{Y} =$