

## Answer on Question #84309 – Math – Statistics and Probability

### Question

A sample of size 3 is to be selected from a population of 10 households. List all possible samples by linear systematic sampling.

### Solution

$$N = 10, n = 3 \Rightarrow k = N/n = 3.33 \dots \notin \mathbb{Z} \Rightarrow k = [3.33 \dots] = 3$$

Arrangement of households ( $n \times k$  table):

1	2	3
4	5	6
7	8	9
10		

The samples are  $S_{r=1} = \{1,4,7,10\}$ ,  $S_{r=2} = \{2,5,8\}$ ,  $S_{r=3} = \{3,6,9\}$

**Answer:**  $\{1,4,7,10\}$ ,  $\{2,5,8\}$ ,  $\{3,6,9\}$ .