

Answer on Question #80524 – Math – Statistics and Probability

Question

The number of cellular phones stolen in South Africa for 30 consecutive days is shown below.

23	27	41	32	28	34	35	42	48	53
45	53	16	33	57	55	43	31	11	58
59	18	24	47	31	15	42	44	36	15

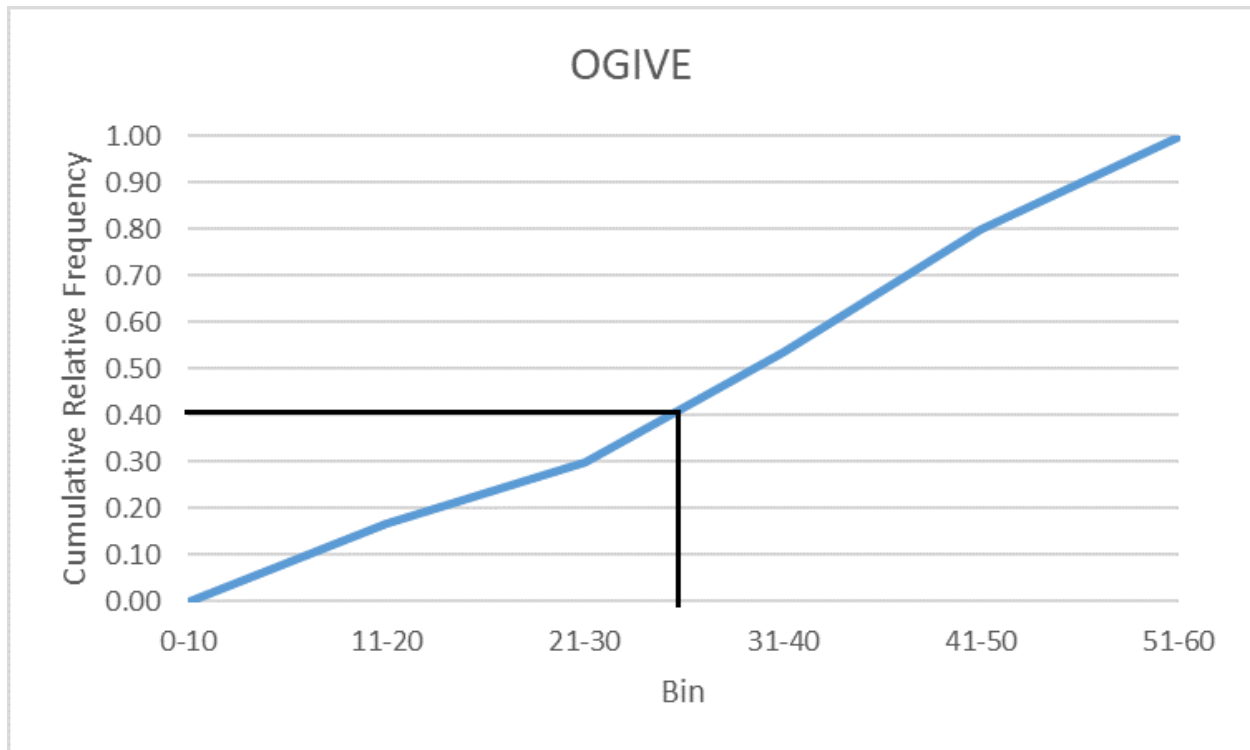
- 1.1. Using 6 classes of equal width, construct a grouped frequency distribution of the above data. (7)
- 1.2. Draw an OGIVE curve depicting the data and use it to estimate the 40th percentile. (7)
- 1.3. Calculate the mid-50% range. (5)
- 1.4. Calculate the coefficient of variation and interpret the value obtained. (6)

Solution

1.1.

<i>Bin</i>	<i>Frequency</i>	<i>Relative Frequency</i>	<i>Cumulative Relative Frequency</i>
0-10	0	0.00	0.00
11-20	5	0.17	0.17
21-30	4	0.13	0.30
31-40	7	0.23	0.53
41-50	8	0.27	0.80
51-60	6	0.20	1.00

1.2.



40th percentile lies in the 31-40 class.

1.3. Mid-50% range: $R = Q3 - Q1 = 47.25 - 26.25 = 21$.

1.4. $CV = \frac{\sigma}{\mu} = \frac{13.80}{36.53} = 0.38$. Coefficient of variation is moderate.