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Roll	x	\bar{x}	$x - \bar{x}$	$ x - \bar{x} $	$(x - \bar{x})^2$
1	23	$324/15 = 21.6$	$23 - 21.6 = 1.4$	1.4	1.96
2	22	21.6	0.4	0.4	0.16
3	21	21.6	-0.6	0.6	0.36
4	22	21.6	0.4	0.4	0.16
5	21	21.6	-0.6	0.6	0.36
6	20	21.6	0.4	0.4	0.56
7	21	21.6	-0.6	0.6	0.36
8	21	21.6	-0.6	0.6	0.36
9	22	21.6	0.4	0.4	0.16
10	22	21.6	0.4	0.4	0.16
11	22	21.6	0.4	0.4	0.16
12	22	21.6	0.4	0.4	0.16
13	21	21.6	-0.6	0.6	0.36
14	22	21.6	0.4	0.4	0.16
15	22	21.6	0.4	0.4	0.16
Total(n)	= 324				

$$\therefore MD = \frac{1}{n} \sum_{i=1}^n |x_i - \bar{x}| = \frac{2.2}{15} = 0.6133$$

$$\therefore \sigma^2 = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2 = \frac{7.6}{15} = 0.5067$$

$$\therefore SD = \sigma = \sqrt{\text{Variance}} = \sqrt{0.5067} = 0.7118$$

$$\therefore CV = \frac{0.7118}{21.6} \times 100\% = \frac{71.18}{21.6} \times 100\% = 3.2954\%$$

Given
 $n = 23, 22, 21, 22, 21, 20, 21, 21, 22, 22, 22, 22$,
 $n = 15$

1) Mean,

a) Arithmetic mean = $\frac{\sum n}{n} = \frac{324}{15} = 21.6$

b) Geometric mean = $(\prod n)^{\frac{1}{n}} = (1.03 \times 10^{20})^{\frac{1}{15}} = 21.5868$

c) Harmonic mean = $\frac{n}{\frac{1}{\sum n}} = \frac{15}{0.695} = 21.5827$

2) Median,

$20, 21, 21, 21, 21, 21, 22, 22, 22, 22, 22, 22$,
 $22, 22, 23$

$\therefore \text{Median} = 22$

3) Mode,

$20, 21, 21, 21, 21, 21, 21, 22, 22, 22, 22, 22, 22$,
 $22, 22, 23$

$\therefore \text{Mode} = 21, 22$

$$\text{G.M.} = \sqrt[n]{\prod n} = \sqrt[15]{1.03 \times 10^{20}} = 21.5868$$

$$\text{H.M.} = \frac{n}{\frac{1}{\sum n}} = \frac{15}{0.695} = 21.5827$$

$$P.M. = \frac{21 + 22}{2} = 21.5$$