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[1] Age ⇒ 23, 22, 21, 22, 21, 20, 21, 21, 22,

22, 22, 22, 21, 22, 22.

Measure of Central Tendency

1. Mean ⇒

(a) Arithmetic mean $= \dfrac{324}{15} = 21.60$.

(b) Geometric mean $= (1.031 \times 10^{20})^{1/15}$

$= 21.588$.

(c) Harmonic mean $= \dfrac{15}{0.6952}$

$= 21.5762$

[Ans]

2. Median ⇒ Sorted age = 20, 21, 21, 21,

21, 21, 22, $\boxed{22}$, 22, 22, 22, 22, 22, 22, 23.

The median value is 22.

3. Mode ⇒ The most often used number

is 22. It is been used a total of

eight times. So, Mode is 22.

"Dispersion"

Roll	Age (xi)	Average $(\bar{x})$	$xi-\bar{x}$	$|xi-\bar{x}|$	$(xi-\bar{x})^2$
1	23		1.4	1.4	1.96
2	22		0.4	0.4	0.16
3	21		−0.60	0.6	0.36
4	22		0.4	0.4	0.16
5	21		−0.6	0.6	0.36
6	20		−1.6	1.6	2.56
7	21	$\frac{324}{15}$	−0.6	0.6	0.36
8	21		−0.6	0.6	0.36
9	22	$= 21.6$	0.4	0.4	0.16
10	22		0.4	0.4	0.16
11	22		0.4	0.4	0.16
12	22		0.4	0.4	0.16
13	21		−0.6	0.6	0.36
14	22		0.4	0.4	0.16
15	22		0.4	0.4	0.16
Total	324			9.2	7.6

Mean deviation $= \dfrac{9.2}{15} = 0.6133$ $[\because n=15]$

variance, $\sigma^2 = \dfrac{7.6}{15} = 0.5067$

Standard deviation, $\sigma = \sqrt{0.5067} = 0.7118$

coefficient variation $= \dfrac{0.7118}{21.6} \times 100\% = 3.2954\%$

[Ans]