

\* Age  $\rightarrow$  23, 22, 25, 22, 21, 20, 21, 21, 22, 22, 22, 22, 21, 22, 22.

### Measure of central Tendency

1. Mean  $\rightarrow$

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

b) Geometric mean  $= (1.031 \times 10^{20})^{\frac{1}{15}}$   
 $= 21.588$

c) Harmonic mean  $= \frac{15}{0.6952} = 21.5762$   
(Ans)

2) Median  $\rightarrow$  Sorted age = 20, 21, 21, 21, 21, 21, 22, 22, 22, 22, 22, 23.

22 22, 22, 22, 22, 22, 22, 23.

The median's value is 22.

3) mode  $\rightarrow$  the most often used number is 22. It's been used a total of eight times. So Mode is 22.

# Dispersion

Roll	Age ( $x_i$ )	Average ( $\bar{x}$ )	$x_i - \bar{x}$	$ x_i - \bar{x} $	$(x_i - \bar{x})^2$
1	23	$\frac{24}{15}$ $= 21.6$	1.4	1.4	1.96
2	22		0.4	0.4	0.16
3	21		-0.6	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		-0.6	0.6	0.36
8	21		-0.6	0.6	0.36
9	22		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			9.2		7.6

Mean deviation =  $\frac{9.2}{15} = 0.6133$

Variance  $\sigma^2 = \frac{7.6}{15} = 0.5067$  [ $\because N = 15$ ]

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

Coefficient variation =  $\frac{0.7118}{21.6} \times 100\% = 3.2954\%$