

## Geometric Mean.

- \* Geometric mean is the  $n^{\text{th}}$  root of product of all ~~the~~ 'n' terms.
- \* Geometric mean, also called the geometric average, is the  $n^{\text{th}}$  root of the product of n quantities of a series.
- \* Geometric mean is denoted by the symbol 'G' or 'G.M.'

$$G.M. = \sqrt[n]{x_1 \times x_2 \times x_3 \dots \times x_n}$$

$$G.M. = \text{Antilog} \left( \frac{\sum \log x}{N} \right)$$

Ex. Geometric mean of 16 and 36 are

$$G.M. = \sqrt[2]{16 \times 36}$$

$$= 4 \times 6$$

$$= 24 \quad \int$$

Q. The monthly income of 10 families in a locality is as follows. Find the geometric mean.

Family: A B C D E F G H I J

Income: 85 70 15 75 500 8 45 200 40 36

Solution

family	Income in ₹ (x)	logarithms (log x)
A	85	1.9294
B	70	1.8451
C	15	1.1761
D	75	1.8751
E	500	2.6990
F	8	0.9031
G	45	1.6532
H	250	2.3979
I	40	1.6021
J	36	1.5563

$N = 10$

$$\sum \log x = 17.6373$$

$$G.M. = \text{Antilog} \left( \frac{\sum \log x}{N} \right)$$

$$= \text{Antilog} \left( \frac{17.6373}{10} \right)$$

$$= \text{Antilog } 1.76373$$

$$= 58.03 \text{ ₹}$$

Q