Important Mean Formulas PDF

Formulas
Examples
with Units

List of 18
Important Mean Formulas

1) Arithmetic Mean Formulas

1.1) Arithmetic Mean given Geometric and Harmonic Means Formula

Evaluate Formula

Formula

$$AM = \frac{GM^2}{HM}$$

Example

$$50.0208 = \frac{49^2}{48}$$

1.2) Arithmetic Mean of First N Natural Numbers Formula

Evaluate Formula

Formula

$$AM = \frac{n + 1}{2}$$

Example

$$3 = \frac{5 + 1}{2}$$

1.3) Arithmetic Mean of Four Numbers Formula

Evaluate Formula

Formula

$$AM = \frac{n_1 + n_2 + n_3 + n_4}{4}$$

Example

$$50 = \frac{40 + 60 + 20 + 80}{4}$$

1.4) Arithmetic Mean of N Numbers Formula

Evaluate Formula

Formula

$$AM = \frac{S_{Arithmetic}}{n}$$

Example

$$50 = \frac{250}{5}$$

1.5) Arithmetic Mean of Three Numbers Formula

Evaluate Formula

Formula

$$AM = \frac{n_1 + n_2 + n_3}{3}$$

Example

$$40 = \frac{40 + 60 + 20}{3}$$

1.6) Arithmetic Mean of Two Numbers Formula

Evaluate Formula

Formula

$$AM = \frac{n_1 + n_2}{2}$$

Example

$$50 = \frac{40 + 60}{2}$$

2) Geometric Mean Formulas

2.1) Geometric Mean given Arithmetic and Harmonic Means Formula

Evaluate Formula

Formula

$$GM = \sqrt{AM \cdot HM}$$

Example

$$48.9898 = \sqrt{50 \cdot 48}$$

2.2) Geometric Mean of First N Natural Numbers Formula

Evaluate Formula

Formula

$$GM = (n!)^{\frac{1}{n}}$$

Example

$$2.6052 = (5!)^{\frac{1}{5}}$$

2.3) Geometric Mean of Four Numbers Formula

Evaluate Formula

Formula

$$GM = \left(n_1 \cdot n_2 \cdot n_3 \cdot n_4\right)^{\frac{1}{4}}$$

Example

$$44.2673 = \left(40 \cdot 60 \cdot 20 \cdot 80\right)^{\frac{1}{4}}$$

2.4) Geometric Mean of N Numbers Formula

Evaluate Formula

Formula

$$GM = \left(P_{Geometric}\right)^{\frac{1}{n}}$$

Example

$$2.4862 = \left(95\right)^{\frac{1}{5}}$$

2.5) Geometric Mean of Three Numbers Formula

Evaluate Formula

Formula

$$GM = \left(n_1 \cdot n_2 \cdot n_3\right)^{\frac{1}{3}}$$

Example

$$36.3424 = \left(40 \cdot 60 \cdot 20\right)^{\frac{1}{3}}$$

2.6) Geometric Mean of Two Numbers Formula

Evaluate Formula

Formula

$$GM = \sqrt{n_1 \cdot n_2}$$

Example

$$48.9898 = \sqrt{40 \cdot 60}$$

3) Harmonic Mean Formulas

3.1) Harmonic Mean given Arithmetic and Geometric Means Formula

Evaluate Formula

Formula

$$HM = \frac{GM^2}{AM}$$

Example

$$48.02 = \frac{49^2}{50}$$

3.2) Harmonic Mean of Four Numbers Formula

Evaluate Formula

Formula

$$HM = \frac{4}{\frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_3} + \frac{1}{n_4}}$$

Example

$$38.4 = \frac{4}{\frac{1}{40} + \frac{1}{60} + \frac{1}{20} + \frac{1}{80}}$$

3.3) Harmonic Mean of N Numbers Formula

Evaluate Formula

Formula

$$HM = \frac{n}{S_{Harmonic}}$$

Example

$$125 = \frac{5}{0.04}$$

3.4) Harmonic Mean of Reciprocal of First N Natural Numbers Formula

Evaluate Formula

Formula

$$HM = \frac{2}{n + 1}$$

Example

$$0.3333 = \frac{2}{5 + 1}$$

3.5) Harmonic Mean of Three Numbers Formula

Evaluate Formula

Formula

$$HM = \frac{3}{\frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_3}}$$

Example

$$32.7273 = \frac{3}{\frac{1}{40} + \frac{1}{60} + \frac{1}{20}}$$

3.6) Harmonic Mean of Two Numbers Formula

Evaluate Formula

Formula

$$HM = \frac{2 \cdot n_1 \cdot n_2}{n_1 + n_2}$$

Example

$$48 = \frac{2 \cdot 40 \cdot 60}{40 + 60}$$

Variables used in list of Mean Formulas above

- **AM** Arithmetic Mean
- **GM** Geometric Mean
- **HM** Harmonic Mean
- **n** Total Numbers
- n_1 First Number
- n_2 Second Number
- n_3 Third Number
- n_4 Fourth Number
- $P_{Geometric}$ Geometric Product of Numbers
- $S_{Arithmetic}$ Arithmetic Sum of Numbers
- $S_{Harmonic}$ Harmonic Sum of Numbers

Constants, Functions, Measurements used in list of Mean Formulas above

- Functions: **sqrt**, sqrt(Number)
  A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.

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