

HP 12c Calculator - Mean, Standard Deviation, and Standard Error for Grouped Data

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Introduction

Grouped data are presented in frequency distributions rather than entering each observation individually. Given a set of data points:

X_1, X_2, \dots, X_n

with respective frequencies:

f_1, f_2, \dots, f_n

this procedure computes the mean, standard deviation, and standard error of the mean.

Instructions

Follow these steps to compute the mean, standard deviation, and standard error of the mean:

1. Press **f**, then **CLEAR [REG]**.
2. Key in the first value and press **ENTER** twice.
3. Key in the respective frequency and press **STO, [+], 0, [X]**, then **Sigma +**. The display shows the number of data points entered.
4. Repeat steps 2 and 3 for each data point.
5. To calculate the mean (average) press **RCL, 0, STO, 1, RCL, 6, STO, 3, g**, then **x-mean** (the zero key).
6. Press **g**, then **s** to find the standard deviation.
7. Press **RCL, 0, g**, the **Square Root** key, then **÷** to find the standard error of the mean.

Example

A survey of 266 one-bedroom apartment rentals reveals that 54 rent for \$190 per month, 32 rent for \$195 per month, 88 rent for \$200 per month, and 92 rent for \$206 per month. What are the average monthly rental, the standard deviation, and the standard error of the mean?

| Keystrokes (RPN mode) | Display | Comments |
|---|---------|---|
| f, CLEAR [REG], 190, ENTER, ENTER, 54, STO, [+], 0, [X], then Sigma + | 1.00 | Calculator cleared and first data point entered |
| 195, ENTER, ENTER, 32, STO, [+], 0, [X], then Sigma + | 2.00 | Second data point entered |
| 200, ENTER, ENTER, 88, STO, [+], 0, [X], then Sigma + | 3.00 | Third data point entered |
| 206, ENTER, ENTER, 92, STO, [+], 0, [X], then Sigma + | 4.00 | Fourth data point entered |
| RCL, 0, STO, 1, RCL, 6, STO, 3, g, then x-mean | 199.44 | Average monthly rent |
| g, then s | 5.97 | Standard Deviation |
| RCL, 0, g, square root, then ÷ | 0.37 | Standard Error of the mean |