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

Introduction

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

$X_1, X_2, \ldots, X_n$

with respective frequencies:

$f_1, f_2, \ldots, f_n$

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