

27 October 2025

2.1 Classwork: Graphing Linear Relationships

Instructions

- Enter paired data into the TI-Nspire CX II.
- Sketch a scatter diagram.
- Compute mean values \bar{x} and \bar{y} . Plot the mean point (\bar{x}, \bar{y}) with a circle around it (IB notation).
- Estimate and sketch a *line of best fit* by eye.

Dataset A — New York City Housing Prices

Apartment size (m ²)	Monthly rent (USD)
30	1900
40	2200
50	2550
60	3000
70	3400

Context: Central Brooklyn rentals, sample of small apartments.

Dataset B — Italian Gelato Sales vs Temperature

Temperature (°C)	Daily sales (cups)
18	120
20	140
23	190
26	240
29	310

Context: Gelateria in Florence during early summer.

Dataset C — Subway Ridership vs Rainfall

Rainfall (mm)	Riders (thousands)
0	1800
5	1750
10	1700
15	1630
20	1580

Context: One weekday sample from MTA data.

TI-Nspire CX II: Step Summary

1. Open Lists & Spreadsheet:

- Home → Add Lists & Spreadsheet

2. Enter Data:

- Type variable names in row 1, e.g. size , rent .
- Enter the x-values in column A and y-values in column B.

3. Create Scatter Plot:

- Ctrl + Doc → Add Data & Statistics
- Move cursor to x-axis → select size ; y-axis → select rent .

4. Add Mean Lines:

- Menu → Analyze → Plot Function → Mean Lines
- or manually note \bar{x} and \bar{y} from calculator (Menu → Stat Calculations → 1-Var Stats).

5. Estimate Line of Best Fit by Eye:

- Sketch on paper.
- Compare with regression in later lessons (Menu → Analyze → Regression → Show Linear).

Reflection

- How can you tell whether two variables have **positive**, **negative**, or **no** correlation?
- Which dataset shows the strongest linear relationship?
- Why is the mean point important when drawing a line of best fit?