Problema 1 model rezolvat:

**Determine a trend function of sales and a forecast for 2022.**

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**Soluție**

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A math equations with numbers and symbols

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Description automatically generatedTypescript program to solve the problem:

const x: number[] = [1, 2, 3, 4, 5, 6, 7, 8];

const y: number[] = [34, 30, 23, 17, 14, 13, 11, 10];

// Number of data points

const n: number = x.length;

// Summations

const sum = (arr: number[]): number => arr.reduce((a, b) => a + b, 0);

const sum\_x: number = sum(x);

const sum\_y: number = sum(y);

const sum\_xy: number = sum(x.map((xi, i) => xi \* y[i]));

const sum\_x2: number = sum(x.map(xi => xi \*\* 2));

// Slope (b) and Intercept (a)

const b: number = (n \* sum\_xy - sum\_x \* sum\_y) / (n \* sum\_x2 - sum\_x \*\* 2);

const a: number = (sum\_y \* sum\_x2 - sum\_x \* sum\_xy) / (n \* sum\_x2 - sum\_x \*\* 2);

// Forecast for 2022 (x = 9)

const y\_2022: number = a + b \* 9;

console.log({ a, b, y\_2022 });