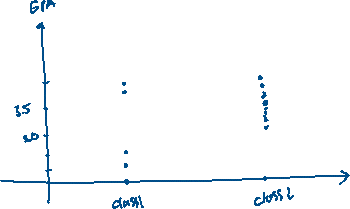
**Measure of Variation:**

This is to measure how the data values spread. If the measure of variation is large, then the data values more spread out.



We notice that the Class 1’s GPA are more spread out than Class 2’s GPA.

We will cover:

* Range
* Variance and Standard Deviation
* Chebyshev’s Theorem
* The Empirical (Normal) Rule

1. Range:

The range of the data = maximum – minimum

Example:

Given the data: 2.0, 2.1, 4.0, 1.9, 3.6

Maximum = 4.0

Minimum = 1.9

Range = 4.0 – 1.9 = 2

1. Summation Notation



A math equations on lined paper

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1. Variance and Standard Deviation

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Other formulas for Variance and Standard Deviation.

**Example:**

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1. **Coefficient of Variation**

**Example**

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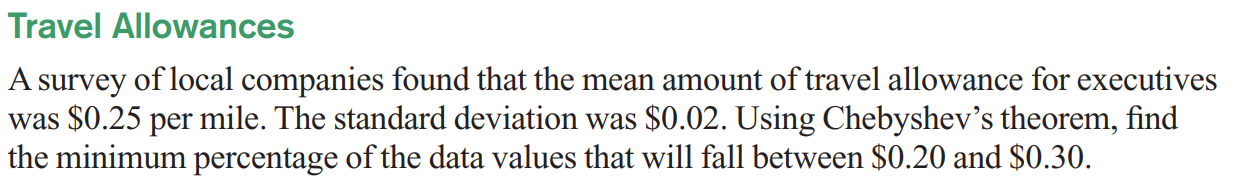
The mean for the number of pages (variable 1) of a sample of women’s fitness magazines is 132, with a variance of 23; the mean for the number of advertisements (variable 2) of a sample of women’s fitness magazines is 182, with a variance of 62. Which variable is more variable?

1. **Chebyshev’s Theorem**

**Example:**

**A close up of a text

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