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(1)

- Variance (x) = 0.08060991570998
  Variance (y) = 2.0990015493111
  Variance (z) = 0.08058253737416

- covariance (x, y) = 0.40242877649
  covariance (y, z) = -0.014394657306 3.

- in .py file.

(2) If there exists number c_1 and $c_2, \ldots c_n$ such that

$$V = c_1 x_1 + c_2 x_2 + \ldots + c_n x_n$$

Also for a matrix A,

$$A(c_1 x_1 + c_2 x_2 + \cdots c_n x_n) = c_1 A x_1 + c_2 A x_2 + \cdots + c_n A x_n$$
$$= c_1 y + c_2 y + \cdots c_n y$$
$$= (c_1 + c_2 + \cdots + c_n) y$$