

The independent variables X and Y have distributions with the same variance σ^2 . Random samples of N observations of X and $2N$ observations of Y are taken, and the results are summarised by

$$\Sigma x = 4, \quad \Sigma x^2 = 10, \quad \Sigma y = 8, \quad \Sigma y^2 = 102.$$

These data give a pooled estimate of 10 for σ^2 . Find N .

[5]