

F Test is used to the two independent estimation of population variance.

10, 20, 30, 40, 50 and 5, 10, 15, 20, 25.

First we need to calculate the variance

1) mean of $(10, 20, 30, 40, 50) = \frac{150}{5} = 30$

mean of $(5, 10, 15, 20, 25) = 15$.

2) Subtract and Square of the each mean value.

$$(30-10)^2 + (30-20)^2 + (30-30)^2 + (30-40)^2 + (30-50)^2 = 1000$$

$$(15-5)^2 + (15-10)^2 + (15-15)^2 + (15-20)^2 + (15-25)^2 = 250$$

3) Standard ~~dev~~ Variance is $(1000)/4$ and $(250)/4$.

4) F test = $\frac{250}{62.5} = 4$.