25-11-2025

Calculate the ANOVA coefficient for the following data:

Plant	Number	Average span	s
Hibiscus	5	12	2
Marigold	5	16	1
Rose	5	20	4

Solution:

Plant	*n*	*x*	*s*	s^2
Hibiscus	*5*	*12*	*2*	*4*
Marigold	*5*	*16*	*1*	*1*
Rose	*5*	*20*	*4*	*16*

$p = 3$
$n = 5$
$N = 15$
$\bar{x} = 16$
$SST = \Sigma n(x-\bar{x})2$

- $SST= 5(12 - 16)2 + 5(16 - 16)2 + 11(20 - 16)2 = 160$
- $MST = SST/p\text{-}1 = 160/3\text{-}1 = 80$
- $SSE = \sum (n-1) = 4\ (4 + 1) + 4(16) = 84$
- $MSE = 7$
- $F = MST/MSE = 80/7$
- $\mathbf{F = 11.429}$