

Suppose you have two independent random samples, each of size 51, from $N(3, \sigma_1^2)$ and $N(\mu, \sigma_2^2)$. If you wish to have a test of size 5% of the null hypothesis that the variances are equal against the alternative that $\sigma_1^2 > \sigma_2^2$, when will you reject the null hypothesis? Express your answer in terms of an F-distribution.