Consider a random sample of size 37 for $N(0, \sigma_1^2)$ and another, independent random sample of size 51 from $N(\mu, \sigma_2^2)$. Construct a test of the null hypothesis that $\sigma_1^2 = \sigma_2^2$ against the two-sided alternative using the generalized likelihood ratio. Write down an expression for the p-value in terms of an appropriate distribution.