DAE8th Problem 3.01

Given:

3.1. An experimenter has conducted a single-factor experiment with five levels of the factor, and each factor level has been replicated six times. The computed value of the F-statistic is $F_0 = 3.26$. Find bounds on the P-value.

Solution:

The bounds on the P-value is interpreted as the P-value itself. Q: Am I wrong? This can be found using the cdf of the f-distribution as P=1-cdf(F0,v1,v2)

where v1 and v2 are the degrees of freedom for the treatments (levels) and the error within the treatments

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v1=a-1=5-1=4
v2=N-a=30-5=25

In MATLAB code
a=5;
n=6;
N=a*n;
F0=3.26;
pVal=1-fcdf(F0,a-1,N-a)
ans =
    0.0278
```