HW7

1.

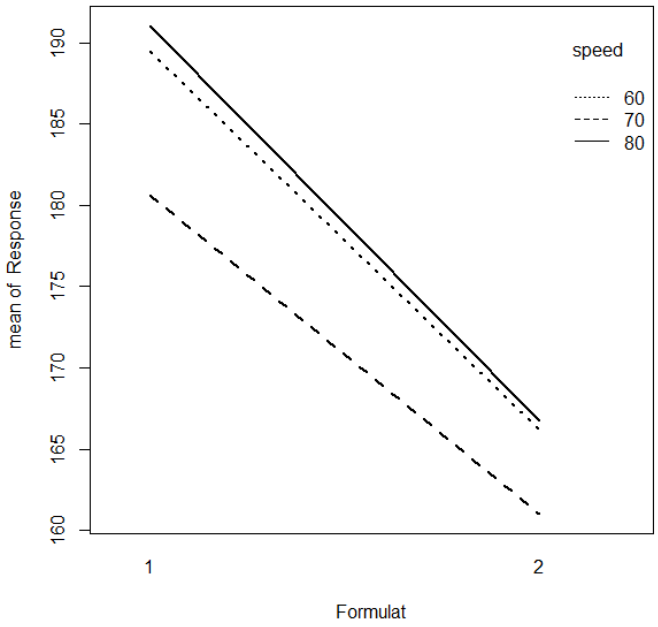
Chapter 11, Section 11.2, Exercise 16 a b c e. "In an experiment to assess … curing time …"
Give the F statistic, rejection region, and conclusion for parts (b) and (c).
For the T Method (underscoring) procedure in part e, see Formula 11I.
Use Formula 11H to find the df's.

2.

Chapter 11, Section 11.2, Exercise 18

Assume a two-way interaction model with fixed-effects. The ANOVA table and interaction plot are given below.

```
              Df Sum Sq Mean Sq F value   Pr(>F)
Formulat       1 2253.4  2253.4 376.271 1.99e-10 ***
Speed          2  230.8   115.4  19.270 0.000179 ***
Formulat:Speed 2   18.6     9.3   1.551 0.251639
Residuals     12   71.9     6.0
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



a. At the α=.05 level of significance, which effects (Formulation, Speed, Formulation-Speed interaction) are significant? Give corresponding P-values.

c. Refer to the interaction plot.

i. Which level combination of Formulation and Speed gives the highest value of Yield on average?

ii. Compute the fitted value for this combination.

You can use the following code for producing the ANOVA table and plot in R.

library(Devore7) ##You need to install this package if you are using it for the first time

```
### intall.packages(“Devore7”)
data(ex11.16)
out=aov(Response~Formulat*Speed,data=ex11.16)
summary(out)

with(ex11.16, {
  interaction.plot(Formulat, Speed, Response, trace.label = "speed",
                   fixed = TRUE, lwd=2)
})
```