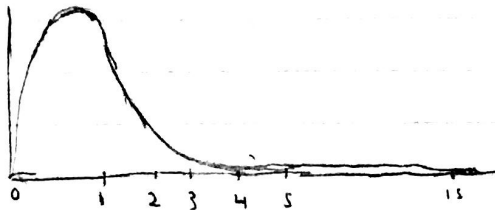


ANOVA 455

43.)

$$H_0: \mu_{\text{cornmeal}} = \mu_{\text{sunflower}} = \mu_{\text{linseed}} = \mu_{\text{menthol}} = \mu_{\text{soybean}} = \mu_{\text{safflower}}$$

 H_a : at least 1 mean is different


$$F\text{-Value} = 15.36$$

$$P = 0.0000$$

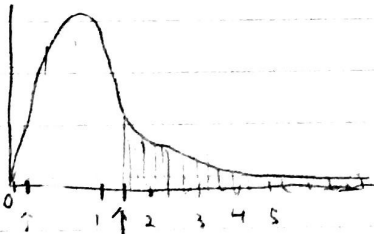
$$p < 0.05, H_0 \text{ is rejected}$$

∴ Sufficient Evidence to reject null; the weight of chickens is affected by feed type

- Conditions:
- Each group is independent from each other and within groups, assume random assignment
 - Observations within each group are normally distributed, some foods don't appear to have a perfectly normal dist. so
- Caution: Variability in each group is roughly constant. Some values are much larger/smaller than the average variance, proceed caution

46.)

$$H_0: \mu_{s_1} = \mu_{s_2} = \mu_{s_3} = \mu_{s_4} = \mu_{s_5} = \mu_{s_6} = \mu_{s_7} = \mu_{s_8}$$

 H_a : Scores vary across all or some classes.


$$F\text{-Value} = 1.87$$

$$P = 0.0767$$

$$P > 0.05, \text{ therefore fail to reject } H_0$$

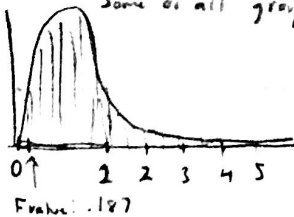
∴ H_0 not rejected, average scores around same in every section. Not enough evidence to reject

Assumptions:

- Each Section is independent from each other & each individual in a group is independent; Assume Random Sampling.
- Assume a roughly normal distribution between each section, some sample sizes are small so exercise caution
- Variability in each section is roughly the same from the table. Some variances in the groups are higher than the average variance, proceed w/ caution.

47.)

$$H_0: \mu_{\text{math}} = \mu_{\text{ns}} = \mu_{\text{ss}}$$

 H_a : Scores for majors vary across some of all groups


$$F\text{-Value} = 1.87$$

Assumptions:

- Each Major is independent of each other & each individual's GPA is independent, sample size is large.
- Each Major's GPA's are roughly normal from box plots
- The Variances are roughly the same based on box plot

c.) 196 sample size

$$b) P = .8313, P > 0.05, \text{ therefore fail to reject } H_0: \text{ GPA for Stat exam based on major roughly the same}$$

48.) a.) $\mu_{Hills} = \mu_{Hs} = \mu_{Hcell} = \mu_{Hch} = \mu_{Hind}$

HatFlores worked based on education vary across all or some groups

b.) Assumed: - roughly normal distributions in each group, large sample sizes

• Variance in each group is roughly the same, since some values high/low

• Independence between each group & w/i each

group, sample sizes are large so safe to assume independence

	Df	Sum Sq	Mean Sq	F-value	P(>F)
c.) degree	<u>4</u>	<u>2006.16</u>	<u>501.54</u>	<u>2.18899</u>	<u>0.0682</u>
Residuals	<u>1,167</u>	<u>267,382</u>	<u>229.119</u>		
Total	<u>1,171</u>	<u>269,388.6</u>			