

## Agronomy 526 Homework

**Due: 4/21/22**

1. The following data are from an oat variety trial that was conducted over two years at three locations. The experimental design was a RCBD with three replications.

Location	Kanawha						Ames						Washington					
	1985			1986			1985			1986			1985			1986		
Yr / Rep	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Variety	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Richland	42	51	49	47	48	49	32	49	51	36	32	37	53	54	50	35	35	31
Cherokee	36	32	44	39	42	44	44	41	44	38	43	38	55	47	47	37	29	36
E77	39	42	43	41	48	42	42	48	43	39	53	42	51	53	48	38	38	43
Larry	48	46	50	52	49	49	52	49	47	44	47	43	50	52	48	48	50	43
Lang	50	48	52	45	48	52	49	51	50	46	44	44	53	52	52	44	48	49
Proat	42	41	46	45	44	41	51	51	47	40	41	42	45	42	44	40	38	28
Ogle	47	49	46	48	46	50	52	49	47	42	43	42	51	51	47	47	50	49
Porter	50	49	52	41	43	42	54	49	46	48	46	38	47	46	51	41	42	38
Don	50	47	45	52	51	45	53	57	52	49	50	50	52	52	57	46	50	49
Hystest	45	46	43	45	40	44	47	45	41	38	42	53	49	46	47	40	37	33

- a. perform the analysis of variance on each year/location.
  - b. determine if the variances are homogeneous across years/locations.
  - c. write the expected mean squares for the combined analysis.
  - d. perform the analysis of variance for the combined experiment.
  - e. interpret the results making sure to explain any interactions.
- \* turn in your SAS program as well as output