

MATH 204: PRINCIPLES OF STATISTICS 2
WINTER 2026
ANOVA TABLES FOR THE COMPLETELY RANDOMIZED DESIGN

Use the given information to complete the ANOVA tables in the format

SOURCE	DF	SS	MS	F
TREATMENTS	$k - 1$	SST	MST	F
ERROR	$n - k$	SSE	MSE	
TOTAL	$n - 1$	SS		

and hence complete the F-tests for the following analyses using statistical tables.

1. Summary data

$$k = 7 \quad n = 26 \quad SST = 6.783 \quad SSE = 8.506$$

2. Summary data

$$k = 5 \quad n = 21 \quad SST = 6.984 \quad SSE = 24.706$$

3. Summary data

$$k = 8 \quad n = 128 \quad SST = 8.947 \quad SSE = 34.986$$

4. Summary data

$$k = 8 \quad n = 37 \quad SST = 6.308 \quad SSE = 11.712$$

5. Summary data

$$k = 7 \quad n = 22 \quad SST = 5.993 \quad SSE = 17.946$$

6. Summary data

$$k = 6 \quad n = 31 \quad SST = 9.541 \quad SSE = 13.408$$

Solutions:

1. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	6	6.783	1.131	2.525
ERROR	19	8.506	0.448	
TOTAL	25	15.290		

Critical value: 3.94

Conclusion: Do not reject H_0

2. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	4	6.984	1.746	1.131
ERROR	16	24.706	1.544	
TOTAL	20	31.690		

Critical value: 3.01

Conclusion: Do not reject H_0

3. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	7	8.947	1.278	4.384
ERROR	120	34.986	0.292	
TOTAL	127	43.933		

Critical value: 2.39

Conclusion: Reject H_0

4. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	7	6.308	0.901	2.231
ERROR	29	11.712	0.404	
TOTAL	36	18.020		

Critical value: 2.76

Conclusion: Do not reject H_0

5. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	6	5.993	0.999	0.835
ERROR	15	17.946	1.196	
TOTAL	21	23.939		

Critical value: 3.41

Conclusion: Do not reject H_0

6. ANOVA table

SOURCE	DF	SS	MS	F
TREATMENTS	5	9.541	1.908	3.558
ERROR	25	13.408	0.536	
TOTAL	30	22.949		

Critical value: 2.60

Conclusion: Reject H_0