Use the following information to answer questions: A manufacturer of automobile transmissions uses three different processes. The management ordered a study of the production costs to see if there is a difference among the three processes. A summary of the findings is shown below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Process 1** | **Process 2** | **Process 3** | **Total** |
| **Process Total ($100’s)** | 137 | 108 | 107 | 352 |
| **Sample Size** | 10 | 10 | 10 | 30 |
| **Sum of Squares** | 1893 | 1188 | 1175 | 4256 |

1. What is the sum of squares for the treatment?

 a. 67.80

b. 58.07

c. 149.34

d. 23.47

1. What is the sum of squares of the error?
2. 67.80
3. 58.07
4. 149.34
5. 23.47
6. What is the critical value of F at the 5% level of significance?
7. 19.45
8. 3.00
9. 3.35
10. 3.39
11. What is the degree of freedom for the numerator of the F ratio?

 a. 2

b. 3

c. 10

d. 27

1. What is the degree of freedom for the denominator?

a. 3

b. 10

c. 27

d. 30

1. What is the mean square for the treatments?

 a. 2.511

b. 2.151

c. 33.9

d. 29.035

1. What is the mean square for error?

 a. 2.511

b. 2.151

c. 33.9

d. 29.035

1. What is the calculated **F**?

 a. 0.086

b. 1.168

c. 11.56

d. 13.50

Use the following information to answer questions:

The personnel manager is concerned about absenteeism. She decides to sample the records to determine if absenteeism is distributed evenly throughout the six-day workweek. The null hypothesis to be tested is:

Absenteeism is distributed evenly throughout the week.

The 0.01 level is to be used. The sample results are:

 **Day of week Number Absent**

 Monday 12

 Tuesday 9

 Wednesday 11

 Thursday 10

 Friday 9

 Saturday 9

1. What kind of frequencies are the numbers 12, 9, 11, 10, 9, and 9 called?

a. Acceptance

b. Critical value

c. Expected

d. Observed

1. How many degrees of freedom are there?

 a. 0

b. 3

c. 4

d. 5

1. What is the expected frequency?

a. 9

b. 10

c. 11

d. 12

1. What is the calculated value of chi-square?

a. 1.0

b. 0.5

c. 0.8

d. 8.0