1.

a. Effect due to type of beach?

H0: mean of ocean = mean of bay = mean of sound HA: Two of the means differ

P-value = .000313 Decision: Means differ

b. Effect due to location?  
H0: mean of west = mean of central = mean of east HA: Two of the means differ

P-value = 0.0000 Decision: Means differ

c. Effects due to interaction of the type of beach and location?

H0: The is no interaction between the type of beach and location HA: There is interaction

P-value: 0.30471 Decision: There is no significant interaction

d. What conclusion can be reached about average coliform bacteria count?

Since there appears to be no significant interaction, we can interpret from the following graphs that most of the bacteria is in the west and it seems to be mainly in the bay. The least bacteria is in the east and ocean.

A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generated

2.

a. What is the response variable in this problem?

Repair time

b. What are the factors in this problem?

Brands and Centers

c. Identify the levels of each factor

Brands: Toshiba, Panasonic, Sony

Service Centers: 1, 2, 3

d. is there an interaction due to service center and VCR brand?

A screenshot of a cell phone

Description automatically generated

Yes, there is a significant interaction at p-value: 0.028985

e. There is effect on repair time when service centers interact, otherwise no.

f. There is effect on repair time both when they interact and individually but, in this case, we want to know when they interact.

g. What should the VCR repair service conclude about the effect of VCR brand and service center upon repair time?

Since the variables are not independent and the interaction affects the outcome, we need to observe how both brands combined with center affect time. We can see with the Tukey test that Toshiba-service center3 takes less time than Sony-service center 3 or Panasonic-service center 1 takes less time than Sony-service center 1. If you have the brand Toshiba take it to service center 3.

A close up of a piece of paper

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A close up of text on a white background

Description automatically generated