**Stat 021 S 21**

**Class 22 Worksheet**

# Model 1

**Main effects model with transmission type (A as the reference level) and displacement as the predictors; mileage is the response.**

1. What is the average effect on gasoline mileage when the transmission is automatic?

2. What is the average effect on gasoline mileage when the transmission is manual?

3. What is the average effect of vehicle weight on gasoline mileage?

4. What is the average effect of vehicle weight on gasoline mileage for automatic transmissions?

5. What is the average effect of vehicle weight on gasoline mileage for manual transmissions?

# Model 2

**Main effects model with transmission type (M as the reference level) and displacement as the predictors; mileage is the response.**

1. What is the average effect on gasoline mileage when the transmission is automatic?

2. What is the average effect on gasoline mileage when the transmission is manual?

3. What is the average effect of vehicle weight on gasoline mileage?

4. What is the average effect of vehicle weight on gasoline mileage for automatic transmissions?

5. What is the average effect of vehicle weight on gasoline mileage for manual transmissions?

# Model 3

**Interaction effects model with transmission type (A as the reference level) and displacement as the predictors; mileage is the response.**

1. What is the average effect on gasoline mileage when the transmission is automatic?

2. What is the average effect on gasoline mileage when the transmission is manual?

3. What is the average effect of vehicle weight on gasoline mileage?

4. What is the average effect of vehicle weight on gasoline mileage for automatic transmissions?

5. What is the average effect of vehicle weight on gasoline mileage for manual transmissions?