

**Assignment-based Subjective Questions:**

1. Categorical variables impact the dependent variable differently, and analyzing them helps understand this effect.
2. Using `drop_first=True` avoids the dummy variable trap by reducing multicollinearity.
- 3.
- 4.
- 5.

**General Subjective Questions:**

1. Linear regression predicts a dependent variable's value based on independent variables using a linear approach.
2. Anscombe's quartet demonstrates that different datasets with similar statistical properties can look very different graphically.
3. Pearson's R is a measure of linear correlation between two variables, ranging from -1 to 1.
4. Scaling modifies data to a specific range; normalization scales data between 0 and 1, while standardization transforms data to have a mean of 0 and a standard deviation of 1.
5. An infinite VIF occurs when an independent variable is a perfect linear combination of other independent variables.
6. A Q-Q (Quantile-Quantile) plot compares the distribution of a dataset with a theoretical distribution to assess normality, useful in validating assumptions for linear regression.