Regression problems can be categorized based on the number of independent variables (features) and the nature of the relationship between the dependent variable (target) and the independent variables. Here are some common types of regression problems:

1. Linear Regression:

- Linear regression models the relationship between a dependent variable and one or more independent variables using a linear equation. It's used when there is a linear relationship between the variables.

2. Multiple Linear Regression:

- Multiple linear regression is an extension of linear regression that involves more than one independent variable. It models the relationship between the dependent variable and multiple predictors.

3. Polynomial Regression:

- Polynomial regression is a form of regression analysis in which the relationship between the independent variable and the dependent variable is modeled as an nth degree polynomial.

4. Ridge Regression (L2 Regularization):

- Ridge regression is a technique for analyzing multicollinearity in multiple regression data. It introduces a penalty term (L2 regularization) to the loss function to prevent overfitting.

5. Lasso Regression (L1 Regularization):

- Lasso regression is another form of regression analysis that uses a penalty term (L1 regularization) to encourage sparsity in the coefficient estimates.

6. Elastic Net Regression:

- Elastic net is a combination of both L1 (Lasso) and L2 (Ridge) regularization. It aims to balance between the benefits of both approaches.

7. Logistic Regression:

- Despite its name, logistic regression is used for classification problems, not regression. It models the probability of a binary target variable given a set of independent variables.

8. Poisson Regression:

- Poisson regression is used when the dependent variable represents counts and follows a Poisson distribution. It's often used in fields like biology and epidemiology.

9. Ordinal Regression:

- Ordinal regression is used when the dependent variable is ordinal, meaning it has ordered categories but the distances between them are not known.

10. Time Series Regression:

- Time series regression involves modeling the relationship between a dependent variable and one or more independent variables in a time-ordered sequence.

11. Nonlinear Regression:

- Nonlinear regression models the relationship between the dependent and independent variables as a nonlinear function. This is used when a linear model isn't appropriate.

12. Robust Regression:

- Robust regression methods are designed to be less affected by outliers in the data. They use techniques that are less sensitive to extreme values.

13. RANSAC Regression:

- RANSAC (Random Sample Consensus) regression is a method for fitting a regression model to a dataset with a large proportion of outliers.

14. Quantile Regression:

- Quantile regression models the conditional quantiles of the dependent variable given the values of the independent variables. It's useful when the relationship between variables isn't constant across quantiles.

These are some of the common types of regression problems. Choosing the right type of regression depends on the nature of the data and the specific problem you're trying to solve.