**Multicollinearity** occurs when two or more independent variables in a regression model are highly correlated, leading to unreliable and unstable estimates of regression coefficients. Below are the **main ways to handle multicollinearity** systematically:

**1. Drop one of the correlated variables**

* variables are highly correlated (e.g. correlation > 0.8 or 0.9), consider removing one.
* Example: If both ‘weight in kg’ and ‘weight in pounds’ are present, drop one.

**2. Combine correlated variables**

* Create a new variable summarizing them, such as their **average** or **principal component**.
* Example: Combine highly correlated exam scores into a composite score.

**3. Use Principal Component Analysis (PCA) or Factor Analysis**

* PCA transforms correlated variables into **uncorrelated principal components**.
* Use the principal components as predictors in place of original variables.
* Reduces dimensionality and removes multicollinearity.

**4. Increase Sample Size**

* Sometimes multicollinearity arises due to small sample sizes relative to the number of variables.
* Collecting more data can reduce standard errors and improve stability.