

# Basis Function

A family of functions/transformations that can be applied to a variable  $X$ :  $f(X_1), f(X_2), f(X_3), \dots$

$$Y = \beta_0 + \beta_1 f(X_1) + \beta_2 f(X_2) + \beta_3 f(X_3) + \dots + \beta_k f(X_k) + \epsilon$$

# **Polynomial Regression Models**