$$y(\mathbf{x}, \mathbf{w}) = w_0 + \sum_{j=1}^{M-1} w_j \phi_j(\mathbf{x})$$

$$\phi_0(\mathbf{x}) = 1$$

$$y(\mathbf{x}, \mathbf{w}) = \mathbf{w}^\top \phi(\mathbf{x})$$

$$y(\mathbf{x}, \mathbf{w}) = w_0 + \sum_{j=1}^{M-1} w_j x_j$$

- **goal**: Predicting a continuous y as a function of the variables **x** and the parameters **w**

- **Model assumption**:
  - data generated by $t = y(\mathbf{x}, \mathbf{w}) + \epsilon$
  - Error ϵ ~ normal distribution with zero mean

- **Loss function**: sum-of-squares error between t and prediction y (least squares)