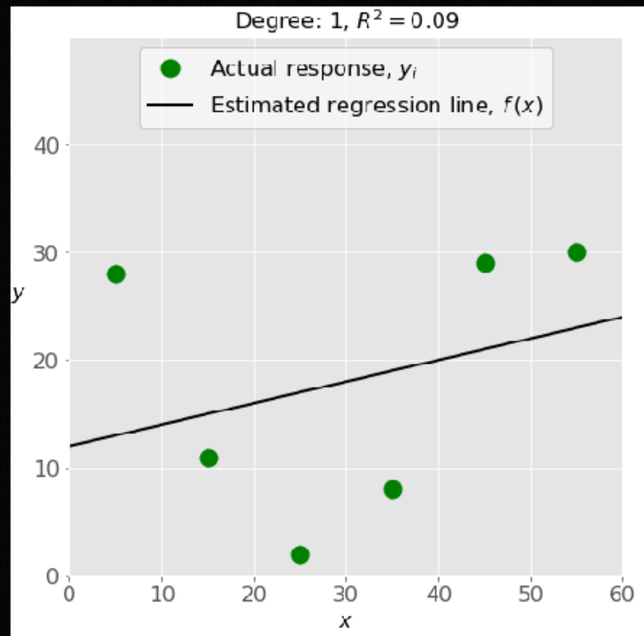
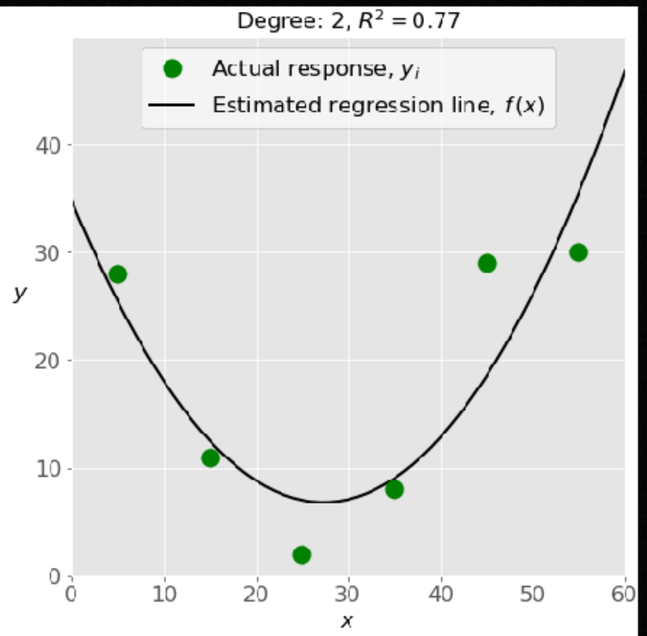
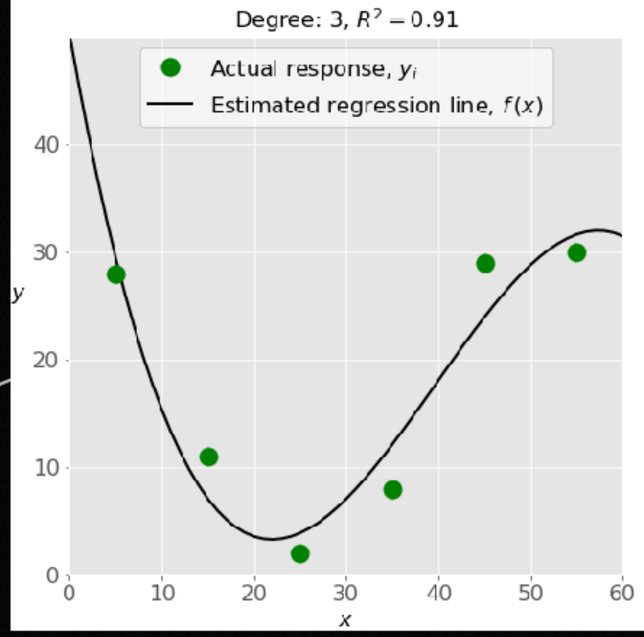
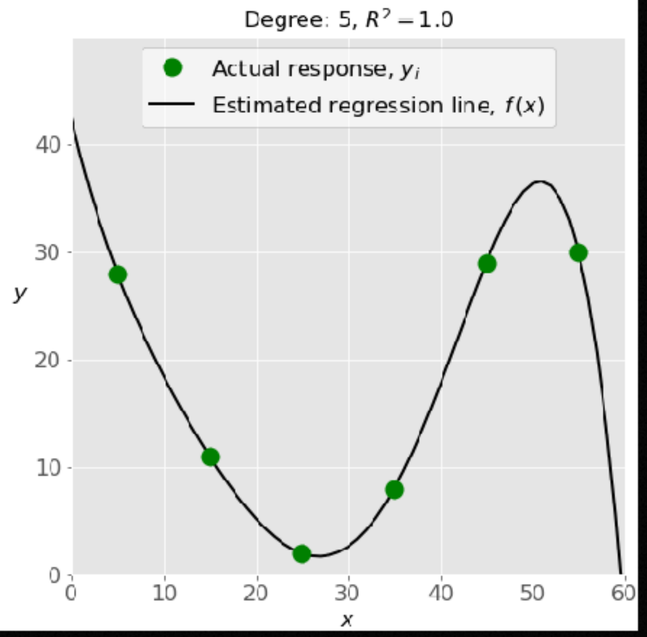
underfit





well-fitted ✓





✓ well-fitted

Overfit

Residual Sum of Squares

$$R^2 = 1 - \frac{RSS}{TSS}$$

Total Sum of Squares

Coefficient of determination

$X = \dots$

$\mathrm{Var}(X) = E[(X - \mu)^2]$

$\mathbb{X} = \dots$

$y = [y_1, \dots y_n]$] $h(x) = f$

residual: $e_i = y_i - f_i$

mean: $\bar{y} = \frac{1}{n} \sum_{i=1}^{n} y_i$

$RSS = \sum_i (y_i - f_i)^2 = \sum_i e_i^2$

$TSS = \sum_i (y_i - \bar{y})^2$