

A Simulation Example

1. Simulate data from assumed probability model

$$Y = 1 - 2x - 3x^2 + 5x^3 + \epsilon$$

2. Fit three models to data:

I. Degree 1 Polynomial $\mu(x) = \beta_0 + \beta_1 x$

II. Degree 3 Polynomial $\mu(x) = \beta_0 + \beta_1 x + \beta_2 x^2 + \beta_3 x^3$

III. Degree 9 Polynomial $\mu(x) = \beta_0 + \beta_1 x + \beta_2 x^2 + \beta_3 x^3 + \dots + \beta_9 x^9$

ENTER



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- How close is the estimated regression (mean) function to the data?
- How close is the estimated regression (mean) function to the true regression (mean) function?

