# Model Order Selection. In-class Exercise 2

EL-GY 6143 Intro Machine Learning. Prof. Sundeep Rangan

## Question

For each model and true function pair below: Determine if there is undermodeling (i.e. the true function is in the model class). If there is no undermodeling, find the true parameters

1. True function: , Model:
2. True function: Model:
3. True function: Model:

## Solution

1. No under-modeling: Expanding the function, , so it is in the model class with
2. No under-modeling. Re-write the true function as, So we can take the true parameter as
3. There is under-modeling. There is no way to capture the term.