- In this assignment, we will learn how to fit a polynomial to data points $\{x, t\}_1^N$ using
  1. Maximum Likelihood (ML) estimation – find $\mathbf{w}$ that maximises $p(T|X, \mathbf{w})$.
  2. Maximum Posterior (MAP) estimation – find $\mathbf{w}$ that maximises $p(\mathbf{w}|X, T)$
- The goal is to reproduce Figures 1.4 till 1.7 from Chapter 1 of Bishop's book.
- The main Matlab files in this assignment are
  - `generate_data.m` generates data from the $\sin(2\pi)$ function and adds random noise.
  - `evaluate_polynomial.m` evaluates polynomial $\mathbf{w}$ at points in vector `x`.
  - `fit_polynomial_ML.m` fits a polynomial to data X, T via Maximum Likelihood (ML) estimation.
  - `fit_polynomial_MAP.m` fits a polynomial to data X, T via Maximum Posterior (MAP) estimation.
- You have to fill in the missing pieces of code in
  - `evaluate_polynomial.m`
  - `fit_polynomial_ML.m`
  - `fit_polynomial_MAP.m`
- To generate all results required for this assignment, run the provided script `get_all_results.m`.
- **Submission**: Paste `your_roll_number_curve_fitting.zip` to `\\printsrv\Teacher Data\Dr.Nazar Khan\Teaching\Fall2016\CS 567 Machine Learning\Submissions\PA1`
- **Deadline**: Wednesday, December 07, 2016 before 5:30 pm.
- The .zip file should ONLY contain
  - `evaluate_polynomial.m`
  - `fit_polynomial_ML.m`
  - `fit_polynomial_MAP.m`

  and
  - `Figure_1_4.png`
  - `Figure_1_5.png`
  - `Figure_1_6.png`
  - `Figure_1_7.png`
  - `polynomial_fitting_ML_VS_MAP.png`