P1.
Write a m-code to create an output matrix Y which consists of only even numbers (in order) from the given input X.

For example,
Input X = [1, 2, …,10]
Output Y = [2, 4,…,10]

P2.
Given an integer *n*, write a m code to compute the following:

$$S = 1 + \frac{1}{2} + \cdots + \frac{1}{n}$$

P3.

Plot $f(t) = \frac{3}{2}\sin^2(t) + 3\cos^2(t) + 1$ for $0 \le t \le 3$, and find *t* that minimizes *f*(*t*).

P4.
Read data from Excel (PB4.xls) and write new values which are multiplied by 2 to the adjacent cells in the same Excel file.

| | |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |

P5.

Plot $f(t) = \sin x \cdot e^x + \log_{10}(3x) + \frac{1}{\sqrt{2x+7}}$ for $0 \le x \le \pi$, and find *x* that maximizes *f*(*t*).

P6.

$$M = \begin{bmatrix} 1 & 4 & -3 \\ 4 & 2 & 0 \\ -3 & 0 & 3 \end{bmatrix}, \text{ calculate } (M^T M)' M^2$$