

Homework 1: Write a program to solve linear equation in matlab

➤ Function file

```
function x = linear_eq(a,b)
x=-b/a;
```

➤ Script file

```
clc
clear all
close all
%%
a = 2;
b = 6;
if a == 0
    fprintf('Coefficient of "a" must not be zero!');
else
    x = linear_eq(a,b)
end
```

Homework 2

1. Write a program to solve quadratic equation in matlab

$$ax^2 + bx + c = 0$$

2. And cubic equation

$$ax^3 + bx^2 + cx + d = 0$$

3. Write a program to produces a vector containing the first n **Fibonacci** numbers

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, ...

Method of solution

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Dividing $ax^3 + bx^2 + cx + d = 0$ by a and substituting $t - \frac{b}{3a}$ for x we get the equation

$$t^3 + pt + q = 0$$

where

$$p = \frac{3ac - b^2}{3a^2},$$

$$q = \frac{2b^3 - 9abc + 27a^2d}{27a^3}.$$