

# Homework 2

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Deadline: Tuesday 3 November, 11:59 pm

Solve the problem from the last HW if you haven't done so (if you have submitted something, check your grade and comments on gradescope).

*Hint: Use Vieta's theorem for the quadratic equation. Since the highest term is just  $x^2$ , sum of the roots is equal to the negative coefficient of  $x$ . Product of the roots is the free term. Then simplify, substitute, simplify... Don't be afraid of an "ugly" answer.*

**Problem 1** (Last HW).

Find all pairs of real numbers  $p \neq q$  such that  $2p$  and  $p + q$  are roots of the quadratic equation  $x^2 + px + q = 0$ .

**Problem 2.**

Solve the equation:

$$3x^2 - 10x = 47.$$

**Problem 3.**

Divide  $2x^4 - 9x^3 + 17x^2 - 10x - 3$  by  $2x - 3$ .