1. The quadratic formula

I added up the area of my two squares: 1300. *The side of one exceeds the side of the other by* 10.
Babylonian tablet, 2000-1600 BCE, British Museum. First known instance of a quadratic equation.

Problem 1.1. Let $x^2 + bx + c$ be a polynomial with complex coefficients and let its roots be r_1 and r_2. Express the following quantities in terms of r_1 and r_2. In the expressions with a square root, you may choose which square root to use.

$$b \qquad c \qquad b^2 - 4c \qquad \sqrt{b^2 - 4c} \qquad \frac{-b + \sqrt{b^2 - 4c}}{2}.$$

Problem 1.2. If we switch r_1 and r_2, how does each of the quantities in Problem 1.1 change?