

A-APR Zeroes and factorization of a quadratic polynomial I

Task

Suppose f is a quadratic function given by the equation $f(x) = ax^2 + bx + c$ where a, b, c are real numbers and we will assume that a is non-zero.

- If 0 is a root of f explain why $c = 0$ or, in other words, $ax^2 + bx + c$ is evenly divisible by x .
- If 1 is a root of f explain why $ax^2 + bx + c$ is evenly divisible by $x - 1$.
- Suppose r is a real number. If r is a root of f explain why $ax^2 + bx + c$ is evenly divisible by $x - r$.



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