

**Proposed Problem.**

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**PROBLEM:**

Let  $A \in \mathbb{Q}$  be chosen such that  $f(x) = x^6 + 3x^5 - Ax^4 - (5 + 2A)x^3 - Ax^2 + 3x + 1$  is irreducible. It's easy to verify that if  $r$  is a root of  $f(x)$ , then so also is  $-r - 1$ . Find the Galois group (up to isomorphism) for the splitting field of  $f(x)$  over  $\mathbb{Q}$ .

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