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Title: Some Diophantine equations from finite group theory: $\Phi_m(x) = 2p^n - 1$

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We show that the equation in the title (with Φ_m the mth cyclotomic polynomial) has no integer solution with $n \geq 1$ in the cases $(m, p) = (15, 41)$, $(15, 5581)$, $(10, 271)$. These equations arise in a recent group theoretical investigation by Akhlaghi, Khosravi and Khatami.

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