Problem 4 (due Monday, October 23)

Let $f(x)=ax^2+bx+c$ be a quadratic polynomial with integral coefficients. Suppose that there are $n\geq 5$ consecutive integers at which the value of f is a perfect square. Prove that b^2-4ac is divisible by every prime number smaller or equal than n.

The problem was solved by Dr. Mathew Wolak. Matt's solution is essentially the same as one of our in-house solutions. For detailed solutions, some additional discussion and related open questions see the following link Solution.