

## Problem 4

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Let  $n \geq 2$  be an integer such that  $2^n + n^2$  is a prime. Determine  $n \pmod{6}$ .

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators will not be accepted.

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Posting Date 2/21/2018. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 3 pm on 3/3/18.