

## Problem 2: Prime Triplets

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For  $n > 3$ , show that the integers  $n, n + 2, n + 4$  cannot all be prime.

FYI: There exist prime numbers of the form  $p, p + 2, p + 6$  and of the form  $p, p + 4, p + 6$ . They are called prime-triplets.

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 9/10/2021. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 by e-mail or hard-copy by 4 pm on Friday, Sep 24, 2021. An email submission must be a single pdf file. Hard copy submissions must be dropped in the file holder at my office door (Hayes 319) and must include a time stamp.