

Names: _____

COMPSCI 250 Discussion #4: Infinitely Many Primes Group Response Sheet

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1 March 2024

In this discussion we will apply our proof methods and some facts about congruences from last week's lectures to prove some facts about prime numbers.

Writing Exercise: With S typed as “finite set of naturals” and the other variables typed as naturals, prove:

- $\forall S : [\forall x : (x \in S) \rightarrow P(x)] \rightarrow [\exists y : P(y) \wedge (y \notin S)]$

- $\forall S : [\forall x : (x \in S) \rightarrow P_3(x)] \rightarrow [\exists y : P_3(y) \wedge (y \notin S)]$