

Homework #2 MME 529

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additionally:

1. Suppose x is an integer and someone has applied the Fundamental Theorem of Arithmetic to it, obtaining $x = p_1^{\alpha_1} p_2^{\alpha_2} \dots p_n^{\alpha_n}$. What would x^3 look like? What generalization can you make out of this?
2. If p is a prime number, does $px - ky = 1$ have solutions? k could be any integer here.
3. If p is a prime number, argue why p must divide $C_{p,r}$ (binomial coefficient)
4. See if you can prove the following:

if x divides the product bc and x is prime then x divides either b or c .

Make up a counterexample where x is *not* prime and x divides their product but not either one.