

Warning

Henceforth, when asked to *symbolically write* a statement, do so **using quantifiers**.

Don't forget needed parentheses, e.g., $a|b-1$ does not make sense and should be written as $a|(b-1)$.

LaTeX Help

Def. A nonzero integer m divides an integer n , denoted $m|n$, provided that $(\exists q \in \mathbb{Z}) [qm = n]$. p82

Remark. The notation for a $m \in \mathbb{Z}^{\neq 0}$ not dividing $n \in \mathbb{Z}$ is $m \nmid n$.

Exercise. A variant of Exercise 3.1.3c.

§3.1
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Conjecture 1. For all integers a , b , and c such that $a \neq 0$, if a divides $b-1$ and a divides $c-1$, then a divides $bc-1$.

a. Sybolically write Conjecture 1. As universes, use \mathbb{Z} and/or $\mathbb{Z}^{\neq 0}$ and/or some cross product of these.

Do not use English words but you can use the divides symbol (e.g., $a|b$).

put solution here

b. Determine if Conjecture 1 is true or false. If Conjecture 1 is true, then write a formal proof of Conjecture 1. If Conjecture 1 is false, then provide a counterexample that shows (and clearly explains) why Conjecture 1 if false.