Introduction to Number Theory problems

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August 5, 2009

1 Divisibility and Primality

Exercises 1.1. Let $a, b, c \in \mathbb{Z}$ with $d \neq 0$. Show that $a|b$ if and only if $da|db$. **Proof**

We have : $a|b \leftrightarrow b = aq$ with $q \in \mathbb{Z} if d \neq 0 then : bd = daq \leftrightarrow bd = (ad)q \leftrightarrow ad|bd$ (1)