

## ANSWER on Question #85799 – Math – Discrete Mathematics

### QUESTION

Prove that for all integers  $a, b, c$  such that  $c \neq 0$ , if  $ac|bc$  then  $a|b$ .

### SOLUTION

Notation  $ac|bc$  means that there exists an integer  $k$  such that

$$k \cdot (ac) = bc \rightarrow c(ka) = cb$$

We can divide the last equality  $c(ka) = cb$  by  $c$ , since  $c \neq 0$  by the condition.

Then,

$$c(ka) = cb \mid \div (c) \rightarrow ka = b \rightarrow a|b$$

**Q.E.D.**