Math 255 | Quiz 2 | January 24 2018

Name:

Problem 1: *Let a, b and c be integers. Show that if $a|b$ and $b|c$, then $a|c$.*

Solution: By definition, if $a|b$, there is an integer s with $b = as$. Again by definition, if $b|c$, there is an integer t with $c = bt$. Substituting one equation into the other, we get

$$c = bt = (as)t = a(st).$$

Since the product of two integers is an integer, st is an integer, and by definition $a|c$.