Understanding Theorem 1.4

First do an example:

    a. Find integers greater than 1 such that $a \mid bc$ and $(a,b)=1$. Is it true that $a \mid c$?

a=

b=

c=

And a non-example:

    b. Find integers greater than 1 such that $a \mid bc$ and $(a,b)=2$ where $a \nmid c$?

a=

b=

c=

Now understand the proof:

Let, *a, b, c* be integers such that $a \mid bc$ and $(a,b)=1$

Why do we know that there exists an integer *r* such that $bc = ar$?

Why do we know that there exist integers *u* and *v* such that $au + bv = 1$?

Which of these equations lets us say that $c = acu + bcv$? What did we do to it?

How do we get to the equation: $c = a(cu + rv)$?

Does $c = a(cu + rv)$ mean that $a \mid c$ or that $c \mid a$?