Homework 10 AJ

1. b) All integers are either prime or composite.
$\forall x \in \mathbb{Z}$, x is either prime or composite.

d) There is an integer not divisible by 5.
$\exists x \in \mathbb{Z}$; $c \in \mathbb{Z}$; $x \neq 5c$.

f) There is an integer whose square is negative.
$\exists x \in \mathbb{Z}$, $x^2 < 0$.

h) ~~There~~ There are no integers ~~that~~ that divide into 10.
$\forall x, y \in \mathbb{Z}$, $x/y \neq 10$.

j) There is an integer larger than all other integers.
$\exists x \in \mathbb{Z}$, $\forall y \in \mathbb{Z}$; $x > y$

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2. a) There exists a rational number between any two other rational numbers. TRUE

b) All prime numbers that are not two are odd.
TRUE

c) All squares of odd numbers are odd. TRUE

d) Every rational number is a scaled version of every other rational number. FALSE.

e) Every ~~non~~ positive rational number, when multiplied by some negative rational number, is positive. FALSE.

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3. I didn't do 3.