Math 215 – Fall 2017

Practice Homework 6 – Assigned September 28th, due October 2nd

Note: Remember that you must show your work to get full credit for a problem.

1. Prove that $\forall a, b, c \in \mathbb{Z}^+$ if $a \mid b + c$ and $a \mid c$ then $a \mid b$.
2. Prove that $\forall a, b \in \mathbb{Z}^+$ if ab is even the either a is even or b is even.
3. Prove that $\forall a, b, c \in \mathbb{Z}^+$ if $ac \mid bc$ then $a \mid b$.
4. (Discrete Mathematics (and Other Stuff) Section 2.2 Problem 18)
   Prove that $\forall n \in \mathbb{Z}^+$ that if $n > 2$ then $n^3 - 1$ is composite.