

Assignment 0: Review

Computer Science 311: Spring 2016

Due April 5th, 2016

Problem 1: Proof Strategies

Prove that $x \% y < \frac{x}{2}$ for any natural numbers x and y such that $x > y$.

Problem 2: Cartesian Products

Let $A = \{a, b, c, d\}$ and $B = \{c, d, e, f\}$. Find:

1. $(A \times B) - (B \times A)$
2. $(A \times B) \cap (B \times A)$

Problem 3: Set Cardinalities

Let $S = \{0, 1, 2, 3, 4, 5\}$. Find the number of subsets of S that contain 3 or 5.

Problem 4: Proof by Induction

Prove by induction that $|A \times B| = |A| \cdot |B|$.