Selected Problems on Equivalence Relations

11.3.3

Let $A = \{a, b, c, d, e\}$. Suppose that R is an equivalence relation on A and R has three equivalence classes. Also aRd and bRc. Write out R as a set.

11.3.7

Define a relation R on $\mathbb{Z}$ as xRy if $3x - 5y$ is even. Prove that R is an equivalence relation and describe the equivalence classes.

11.3.13

Suppose that R is an equivalence relation on a finite set A, and every equivalence class has the same cardinality m. Express $|R|$ in terms of m and $|A|$.