25. Work on problems 19–28 of Section 2.4 in the textbook.

26. Let $X = \{1, 2, \ldots, 14\}$ and $R = \{(x, y) |\ x, y \in X \text{ and } 5|(x - y)\}$.

    (a) Find all elements of R.

    (b) Is R reflexive, symmetric, antisymmetric, transitive, a partial order, or an equivalence relation (if so, find all equivalence classes)?

27. Let $X = \{1, 2, 3\}$ and $R = \{(A, B) |\ A, B \in \mathcal{P}(X) \text{ and } A \subset B\}$.

    (a) Find all elements of R.

    (b) Is R reflexive, symmetric, antisymmetric, transitive, a partial order, or an equivalence relation (if so, find all equivalence classes)?

28. Let $X = \{1, 2, \ldots, 10\}$. Define a relation $\sim$ on $X \times X$ by $(a, b) \sim (c, d) \iff ad = bc$.

    (a) Show that $\sim$ is an equivalence relation.

    (b) List one member of each equivalence class.

29. Define a relation on $\mathbb{Z}$ by $m \sim n$ iff 7 divides $m - n$. Show that $\sim$ is an equivalence relation. Find all equivalence classes.