1. List all binary relations on the set $\{0, 1\}$.

2. List all binary relations on the set $\{0, 1\}$ that are equivalence relations.

3. Suppose relation R is defined on set Z where aRb means ab<0. Determine whether R is an equivalence relation on Z.

4. The relation R on Z defined by x R y if x + 3y is even, is an equivalence relation.

5. Suppose A is the set composed of all ordered paired of positive integers. Let R be the relation defined on set A where (a,b)R(c,d) means that a+d = b+c.
    *   Prove that R is an equivalence relation.
    *   Find $[(2, 4)]_R$.

6. Suppose the relation R is defined on the set of all subsets of {1,2,3,4} where SRT means S is a proper subset of T. Determine whether R is a strict order relation on these subsets.

7. Suppose A={2,3,6,9,10,12,14,18,20} and R is a strict order relation defined on A where aRb means a is a divisor of b. Draw the Hasse diagram for R.

8. Let R be the relation on the set of people such that xRy if x and y are people and x is older than y. Show that R is not a partial ordering.