**Time complexity of the code**

In the given code, the most significant operations are:

1. **Generating a random matrix:** The nested loops for generating random values have a time complexity of O(n^2), where n is the dimension of the matrix.
2. **Checking symmetry:** The nested loops for comparing matrix elements have a time complexity of O(n^2), as we compare each element with its corresponding element in the transpose.
3. **Checking anti-symmetry:** Similar to checking symmetry, the time complexity is O(n^2).
4. **Checking transitivity:** The nested loops have a time complexity of O(n^3), as we check each element for the transitive property by comparing it with other elements in the matrix.
5. **Checking equivalence:** It depends on the time complexities of symmetry and transitivity, so the time complexity is O(n^2 + n^3), which simplifies to O(n^3).
6. **Checking function:** The nested loops have a time complexity of O(n^2), as we count the number of "1" entries in each row.

Overall, the code's time complexity is dominated by the operations for checking transitivity, which is O(n^3).