Topology if the Complex Plane

Reading

Section 1.4, part II

Problems

Practice problems:

1. True or False: Union of two open sets is open.
2. True or False: Intersection of two open sets is open.
3. True or False: Union of two closed sets is closed.
4. True or False: Intersection of two closed sets is closed.
5. What about questions 1-4 but for infinitely many sets rather than just 2?
6. True or False: A set can be both open and closed at the same time.

Topics to know

1. Open disc of radius r around a point. Picture.
    - Also "closed disc".
2. Notion of open set.
3. The open disc is an open set.
4. Notion of a closed set.
5. A set is closed iff the limit of every convergent sequence from the set is also in the set.
6. The closed disc is a closed set.
7. Boundary of a set.
8. Closed and bounded sets are called compact.
9. Polygonally-connected sets.
10. Open and connected sets are called regions. Regions are polygonally-connected.