Bridge to Abstract Mathematics

Set Theory: Set Operations

Let A, B, C and D be sets. Prove that….

1. A noname01.tif B iff A \ B = Ø.
2. If A noname01.tif B U C and A ∩ B = Ø, then A noname01.tif C.
3. C noname01.tif A ∩ B iff C noname01.tif A and C noname01.tif B.
4. If A noname01.tif B, then A \ C noname01.tif B \ C.
5. (A \ B) \ C = (A \ C) \ (B \ C).
6. If A noname01.tif C and Bnoname01.tifC, then A U B noname01.tif C.
7. (A U B **) ∩** C **noname01.tif** A U (B ∩ C).
8. A \ B and B are disjoint.
9. If C noname01.tif A and D noname01.tif B, then C ∩ D noname01.tif A ∩ B.
10. If C noname01.tif A and D noname01.tif B, then C U D noname01.tif A U B.
11. If C noname01.tif A, D noname01.tif B, and A and B are disjoint, then C and D are disjoint.
12. If C noname01.tif A and D noname01.tif B, then D \ A noname01.tif B \ C.
13. If A U B noname01.tif C U D, A ∩ B = Ø, and C noname01.tif A, then B noname01.tif D.