

Math History for Precalculus

Augustus de Morgan

1. When did Augustus de Morgan live?
2. Where was he from?
3. Why was he born in India?
4. What important book on logic did de Morgan write?
5. When was it published?

His important work on logic resulted in de Morgan’s laws.

6. Rewrite the following sentence using two complete sentences and a conjunction. “The price of the new car was neither reasonable nor affordable.”
7. On a sunny but cold day Ben said, “It is not a warm and sunny day.” Restate Ben’s sentence using a compound statement.
8. Generalize questions 6–7 using symbols. Write equations to show the relationship.

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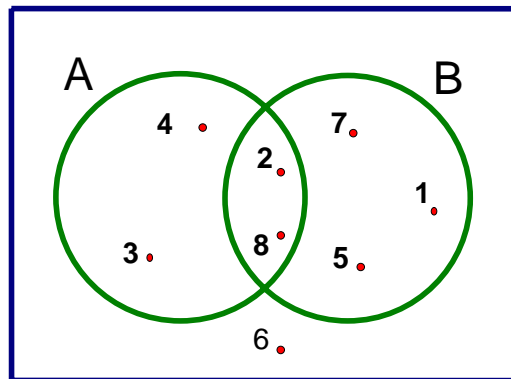
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De Morgan’s laws apply, not just in logic, but also to sets. Remember that the complement (A') of a set A is the set of elements not in A .

9. Use the Venn diagram to find $A', B', A \cap B, A \cup B, (A \cap B)', (A \cup B)', A' \cap B', A' \cup B'$



10. Write de Morgan’s law for sets.
11. Are you surprised that the same equations work for sets and for sentences? What does it show?