



F. Example #5:

All birds are red.

Some cats are red.

Therefore, some birds are cats.

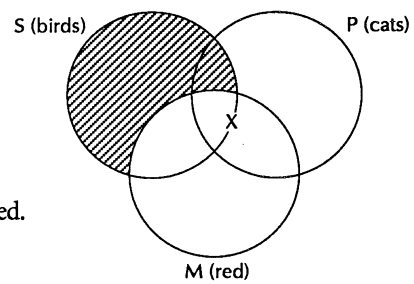
Translating, we have S is birds, P is cats, and M is red.

All S is M.

Some P is M.

Therefore, some S is P.

The argument is invalid.



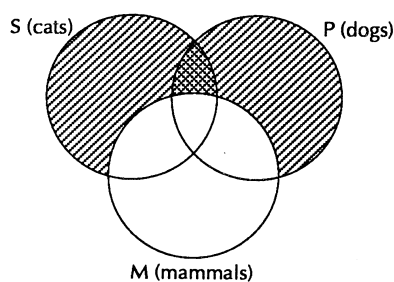
Example #2: An invalid argument:

All dogs are mammals.

All cats are mammals.

Therefore all cats are dogs.

To determine the subject, predicate, and middle term, we look at the conclusion. Here, S is cats, P is dogs, and M is mammals.



Translating, we have:

All S is M.

All P is M.

Therefore, All S is P.

We can see that this is not valid because additional shading is needed to diagram the conclusion.

## II. Testing validity with universal and particular premises

### A. Example #1:

All artists are egotists.

Some artists are paupers.

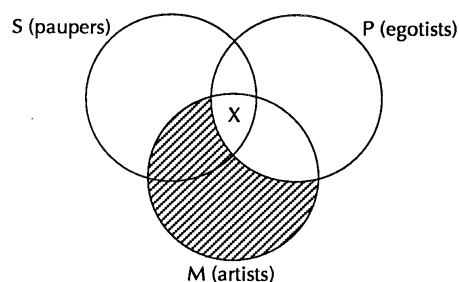
Therefore, some paupers are egotists.

Translating, we have S is paupers, P is egotists, and M is artists.

All M is P.

Some M is S.

Therefore, Some S is P.

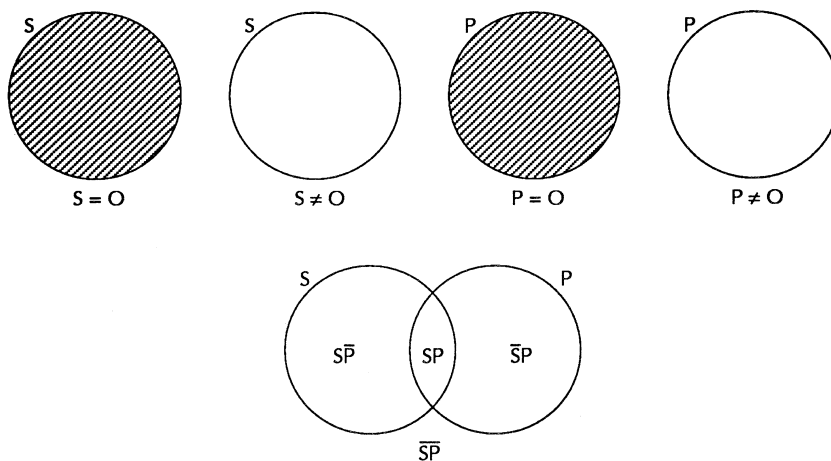


- B. Note that a Venn diagram tests only the validity of the relationship between the premises and the conclusion. It does not test the formal truth of the premises.

### III. Venn Diagrams

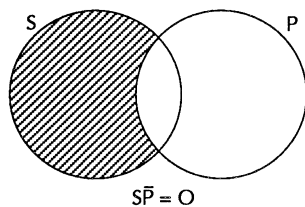
A. A Venn diagram uses circles to depict classes, relationships, and propositions.

B. Examples of the use of Venn diagrams.

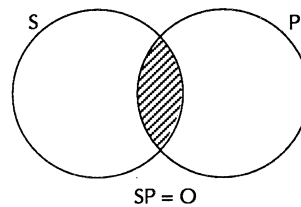


C. Using Venn diagrams to depict categorical propositions.

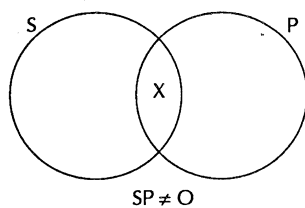
**A:** All  $S$  is  $P$



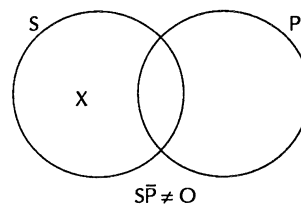
**E:** No  $S$  is  $P$



**I:** Some  $S$  is  $P$



**O:** Some  $S$  is not  $P$

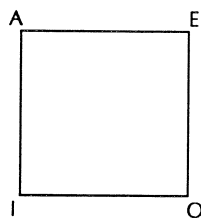


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#### IV. Categorical propositions

- A. The universal affirmative — All S is P.
- B. The universal negative — No S is P.
- C. The particular affirmative — Some S is P.
- D. The particular negative — Some S is not P.
- E. Abbreviations for the categorical propositions — A, E, I, and O.
  - 1. A: universal affirmative
  - 2. E: universal negative
  - 3. I: particular affirmative
  - 4. O: particular negative

#### V. The square of opposition



Relationships:

- Horizontal: A to E (contraries)  
I to O (sub-contraries)
- Vertical: I to A and O to E (subalternations)
- Diagonal: A to O and E to I (contradictions)

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## Tape #2: “Informal Fallacies” Continued

*by R.C. Sproul*

### I. More fallacies of the irrelevant conclusion.

A. *Argumentum ad populum* — argument to the people — appeal to the multitude.

B. *Argumentum ad vericundiam* — appeal to authority.

1. The *ad populum* argument can be thought of as an *ad vericundiam* argument where the authority is the majority.
2. An appeal to a specific authority.
3. A common error is to attribute authority to those who have established authority in another field. An appeal to authority is valuable when the person has established authority in the given field.

### C. Conclusions reached by the error of false causes.

1. *Non causa pro causa* — the error of mistakenly attributing causal power to something which is not the cause.
2. *Post hoc ergo propter hoc* — means “after this, therefore because of this.” If something takes place in time before something else takes place, it must be the cause of what comes after it.

