

Using Venn Diagrams to Test the Validity of Categorical Syllogisms

From: Critical Thinking – A Student's Instruction-Greg Bassham

Step 1. Translate all statements in the argument (if necessary) into standard form categorical statements.

Step 2. Draw and label three overlapping circles, one for each term (class name) in the argument, with the two circles for the conclusion placed on the bottom.

Step 3. Use shading to represent the information in "all" or "no" statements. To diagram statements of the form "All is P," shade that portion of the S circle that does not overlap with the P circle. To diagram statements of the form "No S are P," shade that portion of the S circle that overlaps with the P circle.

Use Xs to represent the information in "some" statements. To diagram statements of the form "Some S are P," place an X in that portion of the S circle that overlaps with the P circle. To diagram statements of the form "Some S are not P," place an X in that portion of the S circle that does not overlap with the P circle.

Step 4. Diagram the two premises. (No marks should be entered for the conclusion.) If the argument contains one "all" or "no" premise and one "some" premise, diagram the "all" or "no" premise first. Otherwise, diagram either premise first.

Step 5: When placing an X in a two-part area, if one part of the area has been shaded, place the X in the unshaded part. If neither part of the area has been shaded, place the X squarely on the line separating the two parts.

Step 6: Look to see if the diagram contains all the information presented in the conclusion. If it does, the argument is formally valid. If it doesn't, the argument is formally invalid.

It takes practice to become skilled at Venn diagramming. Once you get the hang of it, however, you'll find that it is a neat way to check the validity of a surprisingly wide range of everyday arguments.