

# **Introduction to Logical Reasoning**

## *Workshop on Analyzing Categorical Syllogisms*

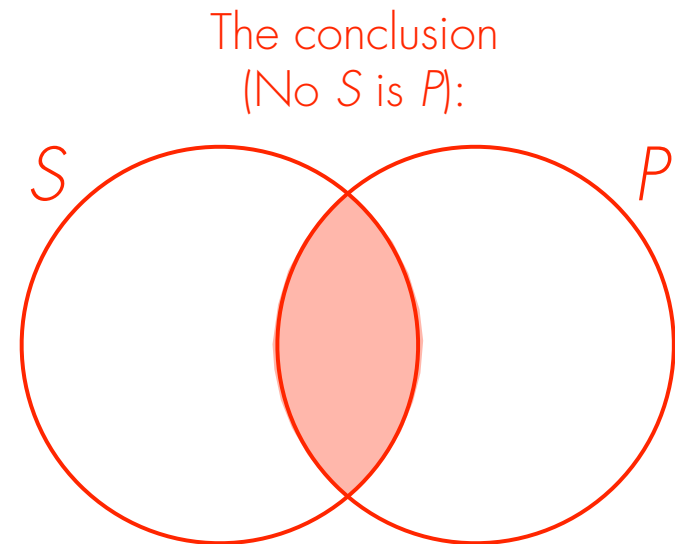
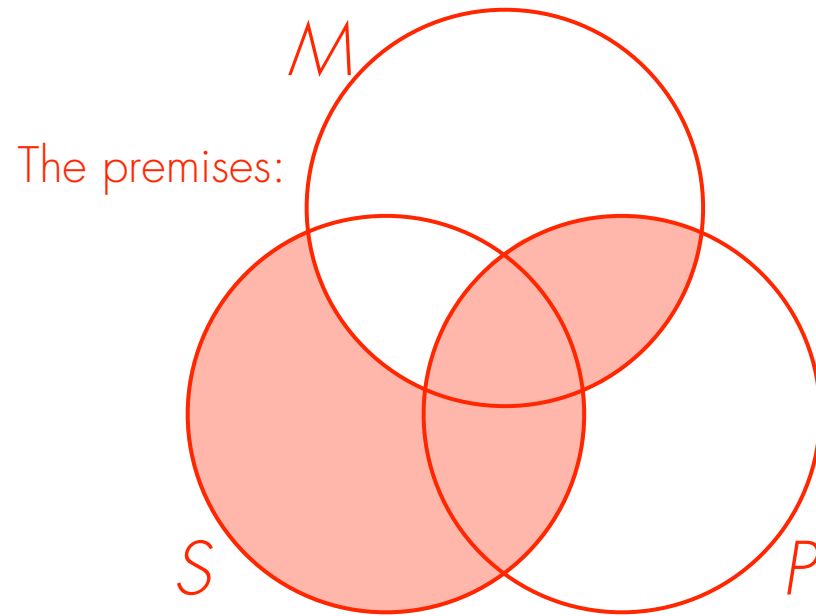
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*Northwestern University in Qatar*  
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# Part I, Problem 1 Solution

Argument's form: **EAE-2**.

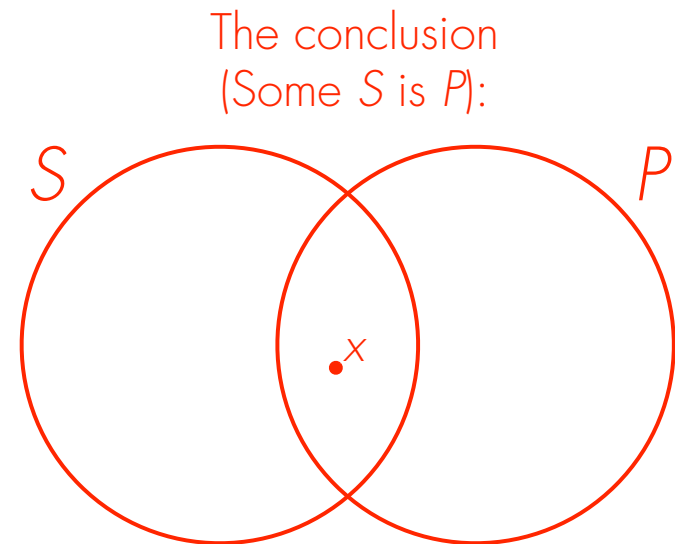
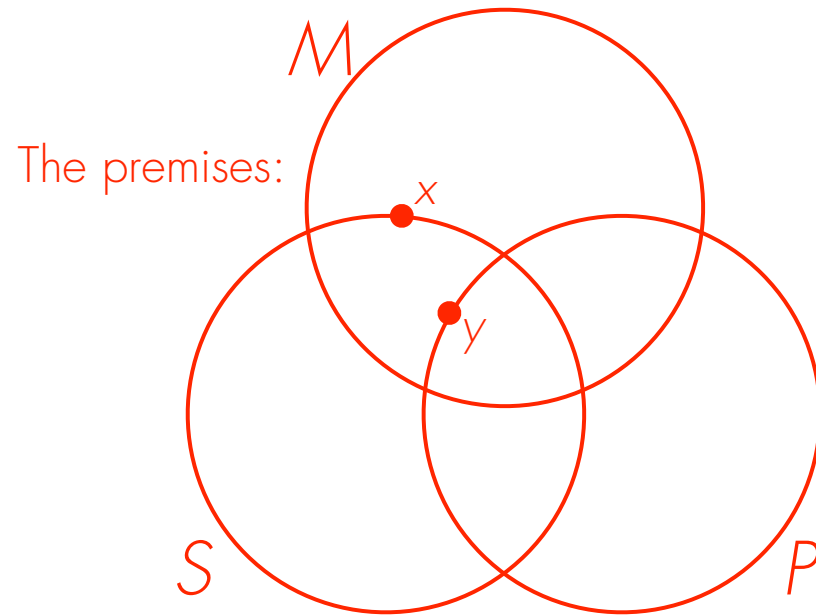


This syllogism is *valid* because the area of overlap between *S* and *P* is completely empty.

This argument's form is known as *Cesare* in Latin.

# Part I, Problem 2 Solution

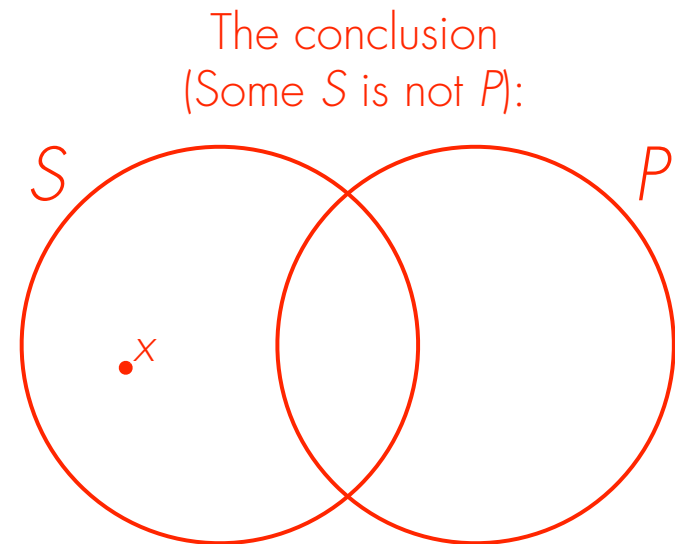
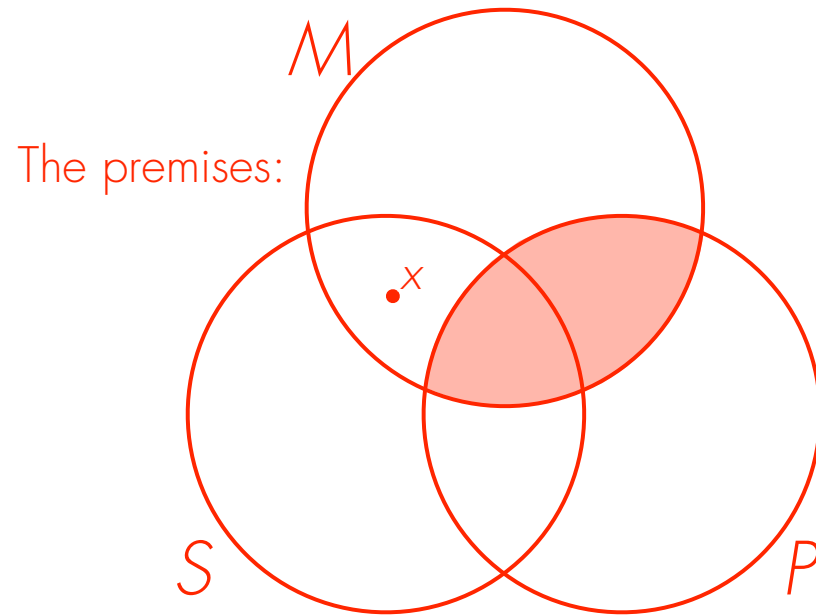
Argument's form: **OII-I.**



This syllogism is *invalid* because we cannot know for sure whether or not there is an  $x$  in the area of overlap between  $S$  and  $P$ .

# Part I, Problem 3 Solution

Argument's form: **EIO-4**.



This syllogism is *valid* because the premises show that there is an  $x$  in the area of  $S$  outside of  $P$ .

This argument's form is known as *Fresison* in Latin.

# Part II, Problem 1 Solution

The major term ( $P$ ) is courageous people,

The minor term ( $S$ ) is investigative journalists, and

The middle term ( $M$ ) is social and political activists.

The standard symbolic form of this syllogism is:

1. Some  $M$  is not  $P$ .

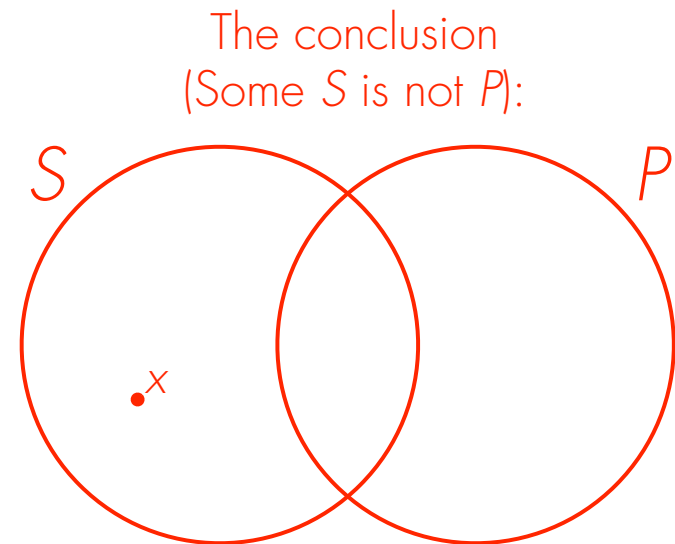
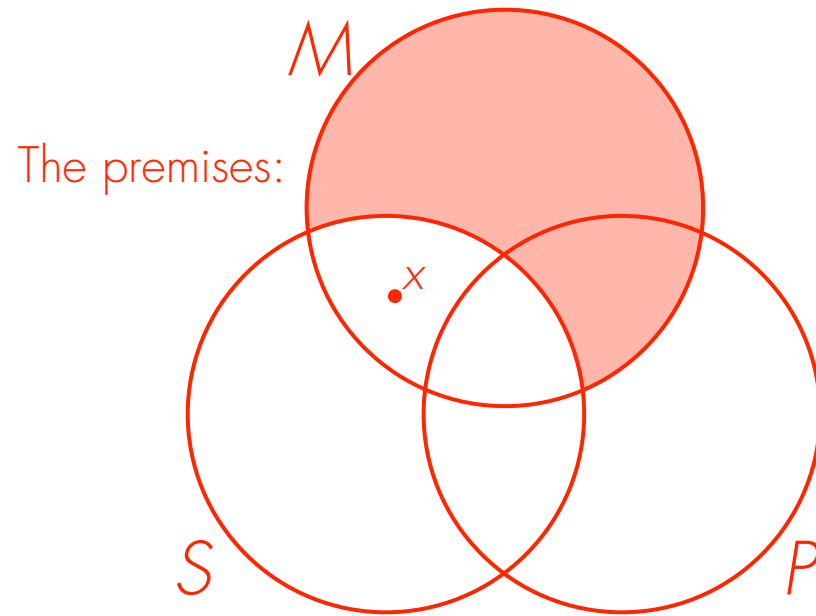
2. All  $M$  is  $S$ .

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$\therefore$  Some  $S$  is not  $P$ .

# Part II, Problem 1 Solution

Argument's form: **OA**O-3.



This syllogism is *valid* because the premises show that there is an *x* in the area of *S* outside of *P*.

This argument's form is known as *Bokardo* in Latin.

# Part II, Problem 2 Solution

The major term ( $P$ ) is things that fade quickly,

The minor term ( $S$ ) is roses, and

The middle term ( $M$ ) is flowers.

The standard symbolic form of this syllogism is:

1. Some  $M$  is  $P$ .

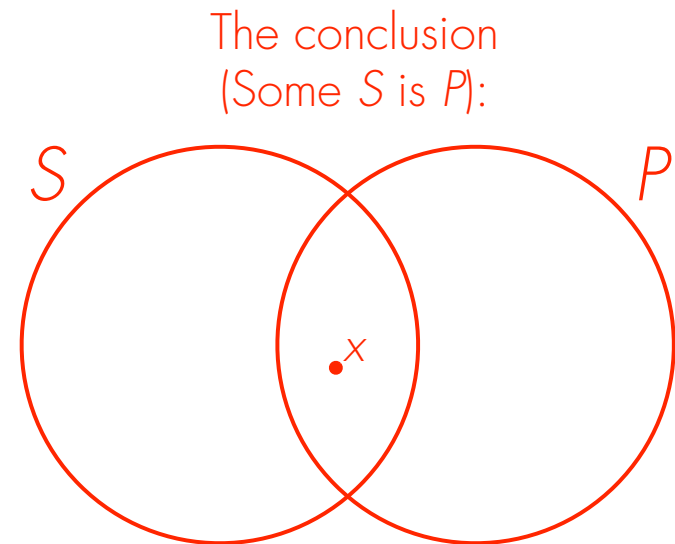
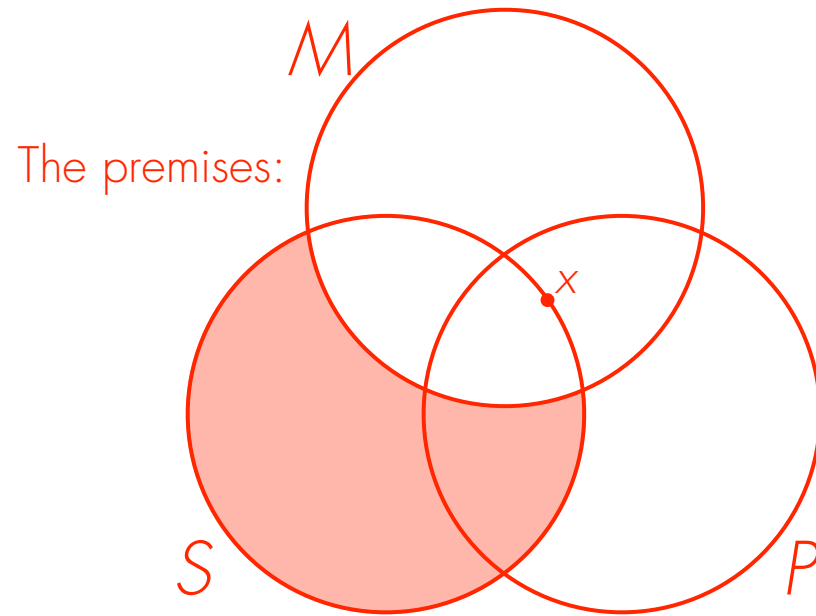
2. All  $S$  is  $M$ .

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$\therefore$  Some  $S$  is  $P$ .

# Part II, Problem 2 Solution

Argument's form: **IAI-1**.



This syllogism is *invalid* because we cannot know for sure whether or not there is an  $x$  in the area of overlap between  $S$  and  $P$ .



# Next Class...

We will have an in-class review session for **exam #3**.

The exam itself is this Tuesday (December 11<sup>TH</sup>), so keep practicing on this material!

Also, please don't forget to turn in your response to the Workshop #11 Questionnaire on your way out.