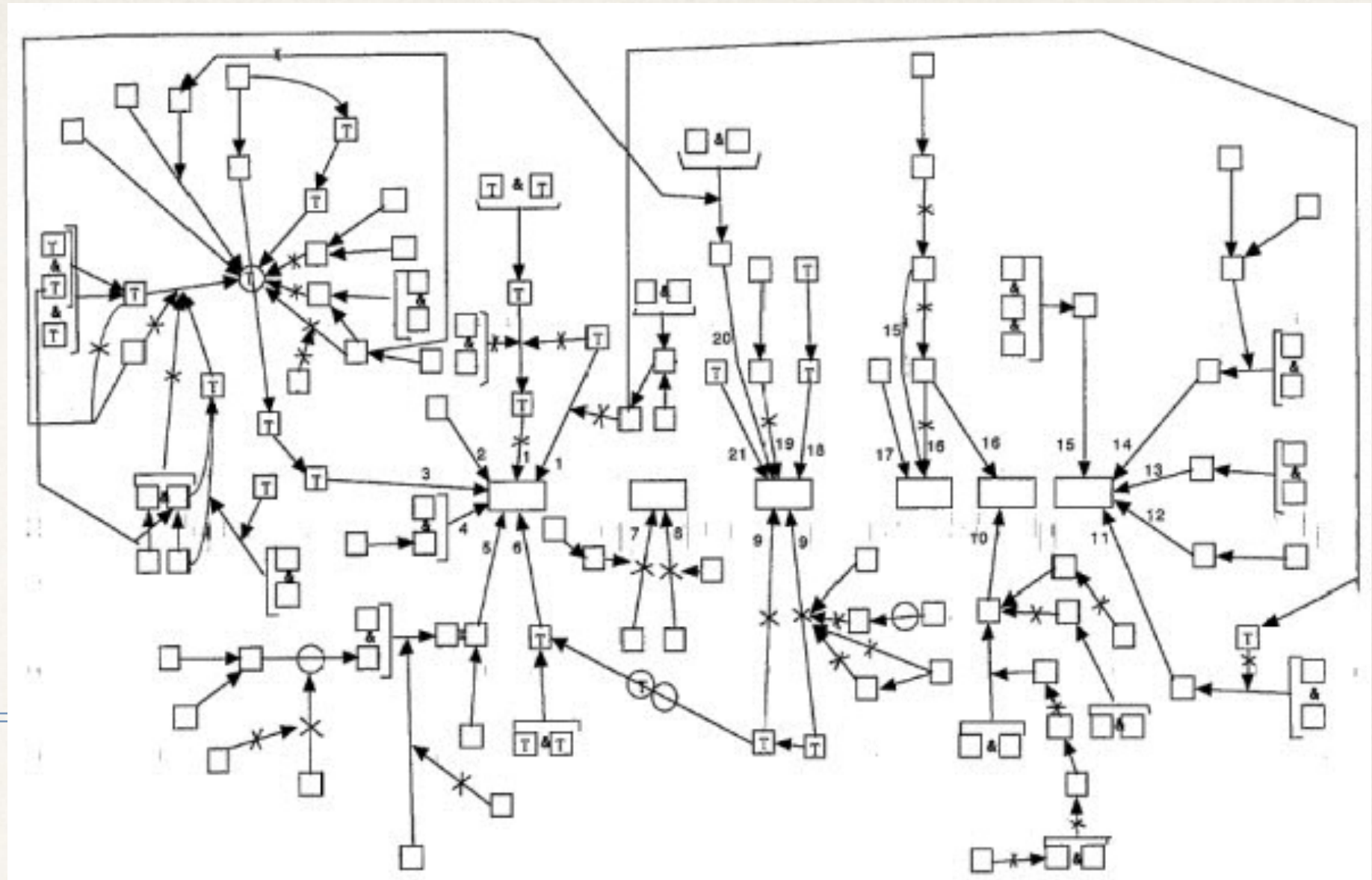


Premises and Conclusion



Marcello Di Bello

Lehman College
CUNY

PHI 169 - Spring 2016

Deductive versus Inductive Arguments

What Is an Argument?

An argument is a **series of statements** in which

(1) some of the statements are the **premises**

(2) one of the statements is the **conclusion**

(3) the premises are meant to **support** the conclusion

Example

*You are wasting your time.
If you are learning old
things, you are wasting
your time. In college you
only learn about old things.
You are going to college.*

Premise (1): If you are learning old things,
you are wasting your time.

Premise (2): In college you only learn about
old things.

Premises (3): You are going to college.

Conclusion (C): You are wasting your time.

Example 2

Research by all social scientists tells us that the death penalty does not deter crime. So, the death penalty does not deter crime.

Premise: Research by all social scientists tells us that the death penalty does not deter crime.

Conclusion: The death penalty does not deter crime.

Example 3

You do not deserve more income than your neighbor. All differences in income between people are a consequence of luck. If you earn more income than your neighbor as a consequence of luck, you do not deserve it. You earn more than you neighbor.

Premise (1): All differences in income between people are a consequence of luck.

Premise (2): If you earn more income than your neighbor as a consequence of luck, you do not deserve it.

Premises (3): You earn more than your neighbor.

Conclusion (C): You do not deserve more income than your neighbor.

I don't think you should support the death penalty to seek revenge. I don't think that's right. I think the reason to support the death penalty is because it saves other people's lives.

(George W. Bush)

izquotes.com

It's racist

Blacks who kill whites are much more likely to be executed than whites who kill Blacks. Forty percent of Death Row inmates are Black.

It targets the poor

More than 90 percent of those charged with capital crimes are too poor to hire an experienced lawyer.

It kills the innocent

Since 1900, more than 400 innocent people have been in a death sentence. At least 23 of the innocent were executed.

It doesn't stop crime

States without the death penalty have lower murder rates. As Texas outpaced the nation in executions from 1982-91, violent crime in the state grew nearly 46 percent – much faster than the national rate.

It's barbaric

At least 10 of the people executed since 1976 were under 18 at the time of the crime. Even more "cruel and unusual" were the 3 executions of mentally retarded convicts in 1995. Executions can be torture: one electrocution required 3 jolts delivered over 14 minutes.

Campaign to End the Death Penalty
P.O. Box 25730, Chicago, IL 60625

What Makes an Argument Good?

- ❖ **Reality Check:**

the *premises* are *true, plausible* or *agreed upon*

- ❖ **Formal Validity:**

the conclusion *follows from* the premises

What Does it Mean for a Conclusion to Follow from the Premises?

- ❖ Whenever the premises are true, the conclusion is **always and invariably true**. This means that the argument is **deductively valid**.
- ❖ Whenever the premises are true, the conclusion is **most likely or most probably true**. This means that the argument is **inductively valid**.

A Misunderstanding to Avoid

Whether a **conclusion follows from the premises**—deductively or inductively—has **nothing** to do with the *whether* the **premises are true, plausible etc.**

A conclusion can follow—deductively or inductively—from false or true premises.

For example, from the obviously false premise that the moon is made of cheddar cheese, it follows—deductively—that the moon is made of something that can be eaten.

Let's See Some Examples

Inductive or Deductive?

Premise: The witness says she saw the defendant around the crime scene at 3:30 PM on Wednesday February 14, 2013.

Conclusion: The defendant was around the crime scene at 3:30 PM on Wednesday February 14, 2013.

Inductive. The conclusion follows only as a matter of probability. The witness might not be telling the truth.

Inductive or Deductive?

Premise: The Moon is either Green or Black.

Premise: The Moon is not Black.

Conclusion: The Moon is Green.

Deductive. The conclusion always follows from the premises. There is no possible situation in which the premises are true and the conclusion is false.

Inductive or Deductive?

Premise: The DNA test shows that the defendant matches with the blood found at the crime scene.

Conclusion: The blood at the crime scene belongs to the defendant.

Inductive. The conclusion follows only as a matter of probability. The DNA test might be wrong.

Inductive or Deductive?

Premise: Abolishing the death penalty did not increase crime rates in Europe.

Conclusion: Abolishing the death penalty will not increase crime rates in the United States.

Inductive. The conclusion follows because of a generalization from the past in Europe to the future in the United States. It is possible to imagine a situation in which the premise is true and the conclusion is false.

Inductive or Deductive?

Premise: If the money supply increases, prices go up.

Premise: The money supply in the US is increasing.

Conclusion: Prices in the US will go up.

Deductive

Inductive or Deductive?

Premise: If the money supply increases, prices go up.

Premise: The money supply in the US is not increasing.

Conclusion: Prices will not go up.

The argument is *not deductive*. Prices could still go up even if the money supply does not increase. Maybe the argument is inductive...

Inductive or Deductive?

Premise: If it is raining, the sidewalk gets wet.

Premise: It is not raining.

Conclusion: The sidewalk does not get wet.

The argument is *not deductive*. It could be inductive because a plausible reason why the floor is not getting wet is that it is not raining.

An Example of a Deductive Argument in Geometry from Euclid's *Elements*

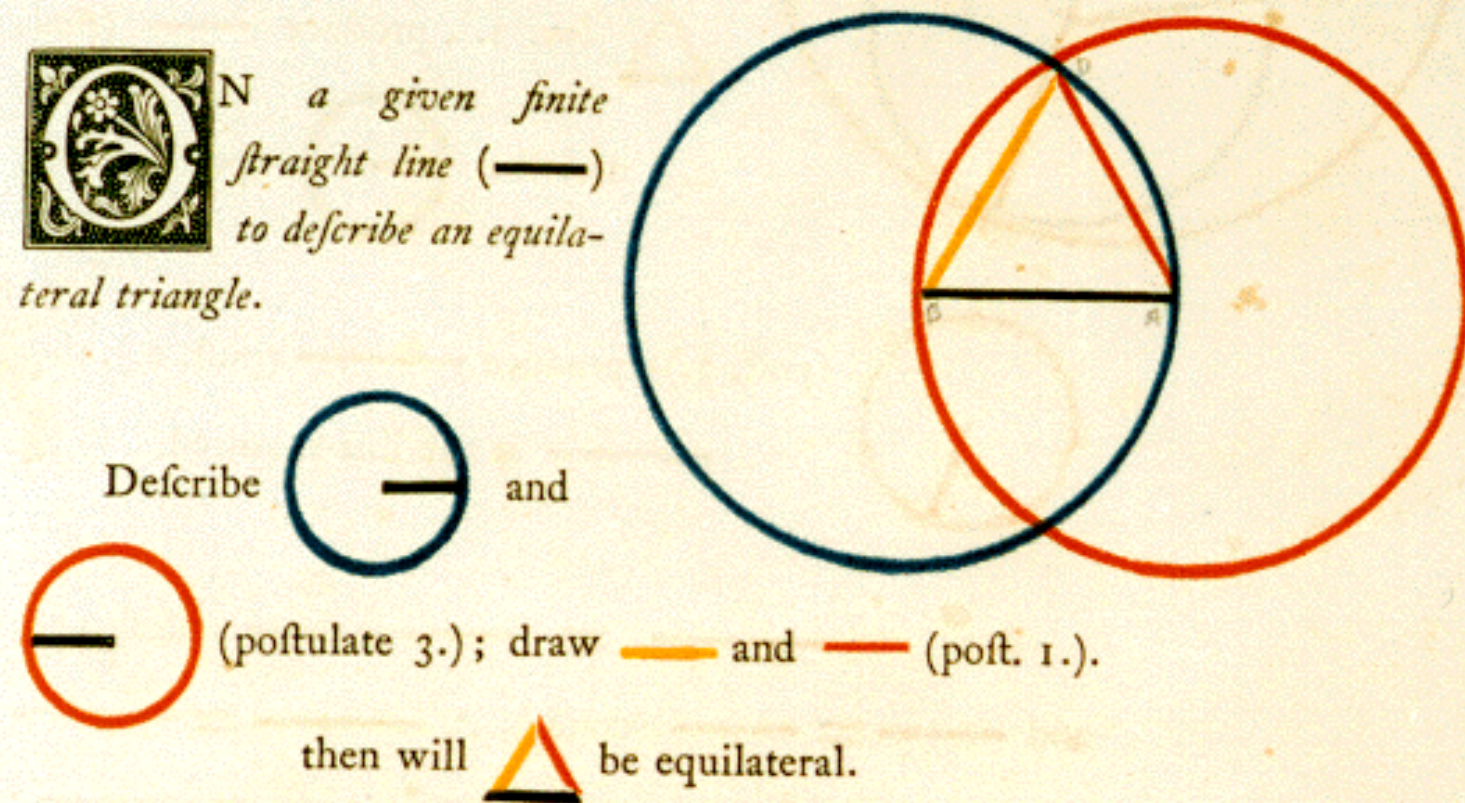
Euclid's *Elements*

(circa 300 BC)



BOOK I.
PROPOSITION I. PROBLEM.

ON a given finite
straight line (—)
to describe an equila-
teral triangle.



Describe


(postulate 3.); draw — and — (post. 1.).

then will  be equilateral.

For — = — (def. 15.);

and — = — (def. 15.),

∴ — = — (axiom. 1.);

and therefore  is the equilateral triangle required.

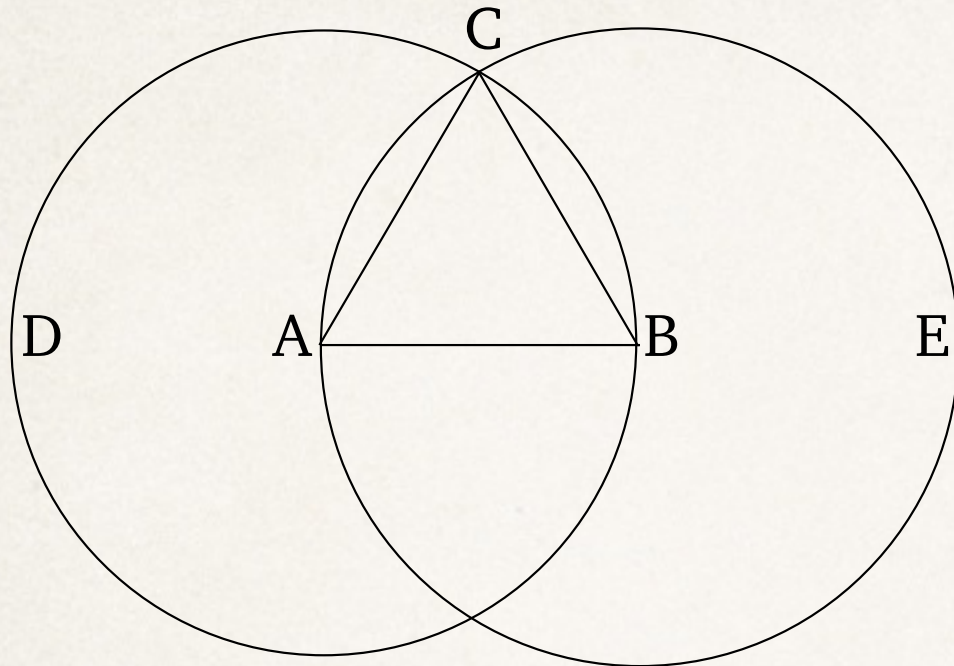
Q. E. D.

Def. 15: A circle is such that all of the straight-lines radiating towards the circumference from one point amongst those lying inside the figure are equal to one another.

Ax. 1 (also called “common notion 1”): Things equal to the same thing are also equal to one another.

Proposition 1

To construct an equilateral triangle on a given finite straight-line.

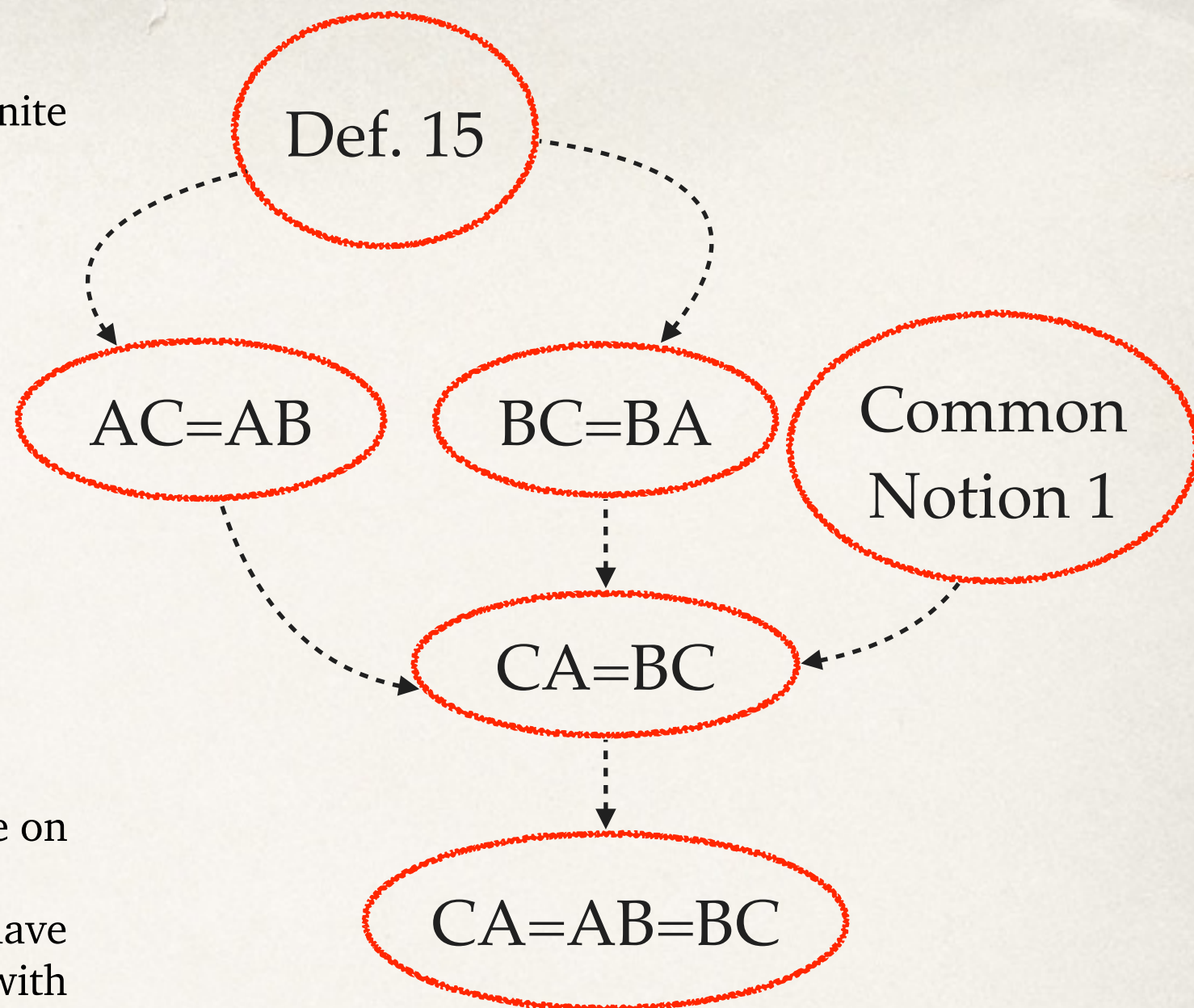


Let AB be the given finite straight-line.

So it is required to construct an equilateral triangle on the straight-line AB .

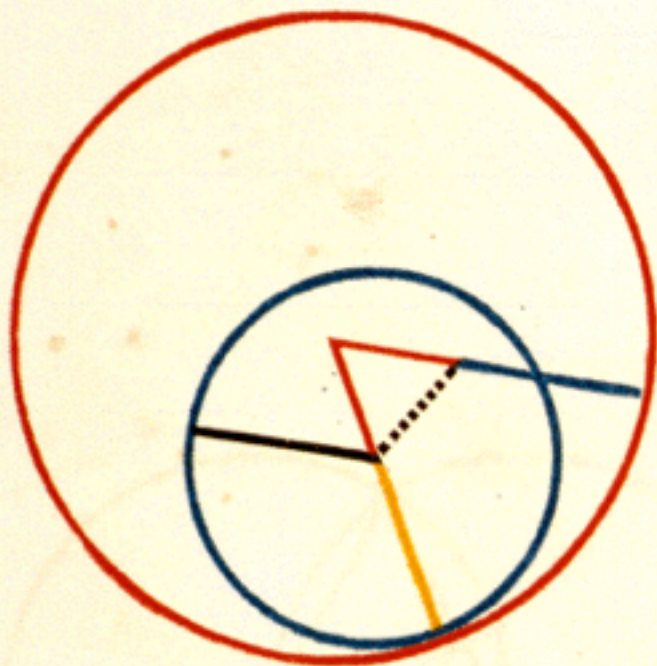
Let the circle BCD with center A and radius AB have been drawn [Post. 3], and again let the circle ACE with center B and radius BA have been drawn [Post. 3]. And let the straight-lines CA and CB have been joined from the point C , where the circles cut one another,[†] to the points A and B (respectively) [Post. 1].

And since the point A is the center of the circle CDB , AC is equal to AB [Def. 1.15]. Again, since the point B is the center of the circle CAE , BC is equal to BA [Def. 1.15]. But CA was also shown (to be) equal to AB . Thus, CA and CB are each equal to AB . But things equal to the same thing are also equal to one another [C.N. 1]. Thus, CA is also equal to CB . Thus, the three (straight-lines) CA , AB , and BC are equal to one another.



Def. 15: A circle is such that all of the straight-lines radiating towards the circumference from one point amongst those lying inside the figure are equal to one another.

Common Notion 1: Things equal to the same thing are also equal to one another.



FROM a given point (— — —),
to draw a straight line equal
to a given finite straight
line (— — —).

Draw ——— (post. 1.), describe
△ (pr. 1.), produce ——— (post.
2.), describe ○ (post. 3.), and



(post. 3.); produce ——— (post. 2.), then
——— is the line required.

For ——— = ——— (def. 15.),
and ——— = ——— (const.), ∴ ——— = ———
(ax. 3.), but (def. 15.) ——— = ——— = ———;
∴ ——— drawn from the given point (— — —),
is equal the given line ———.

Q. E. D.

**Ax. 3 (also called
“common notion 3”):**
If equals are subtracted
from equals, then the
remainders are equals.