

Re-Imagining Theorem-and-Proof in a Guided-Inquiry Geometry Course for Future K-8 Teachers

Chris Oehrlein

Oklahoma City Community College

cdoehrlein@gmail.com

1. My Students

2. My Course

3. Example Topics and Activities

4. Student Response

MY STUDENTS

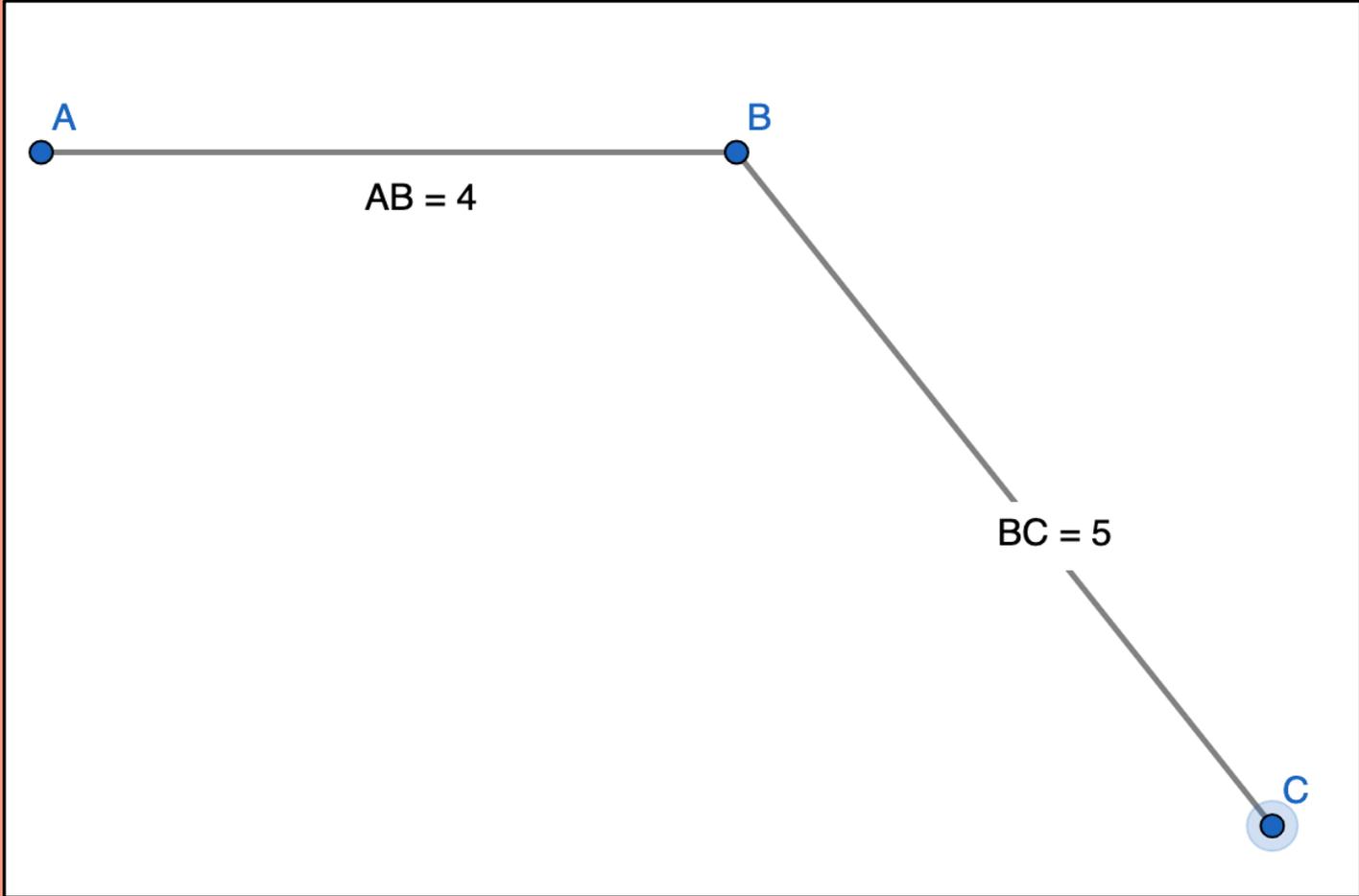
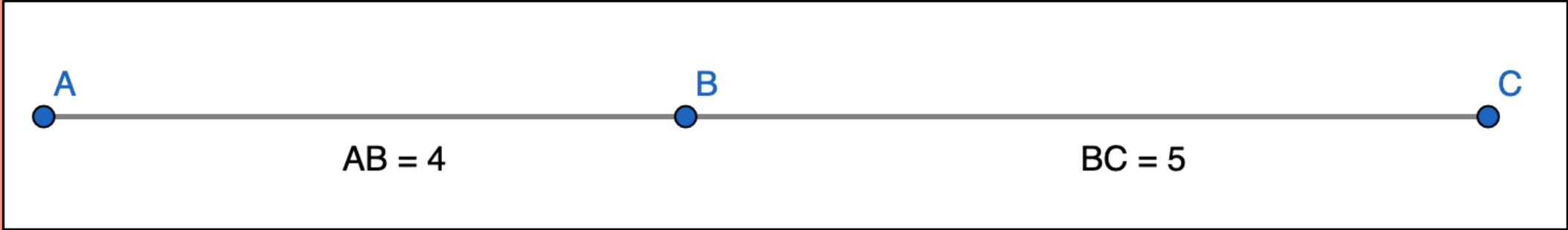
- PreK - 8 and Special Ed Undergraduates (Required)
- Speech Pathology Assistant (Gen Ed Math option to QL)
- Math Majors or Diversified Studies (Support Elective)
 - Probably Secondary Ed Math/Science upon Transfer
- About $1/3$ from Transfer Institutions

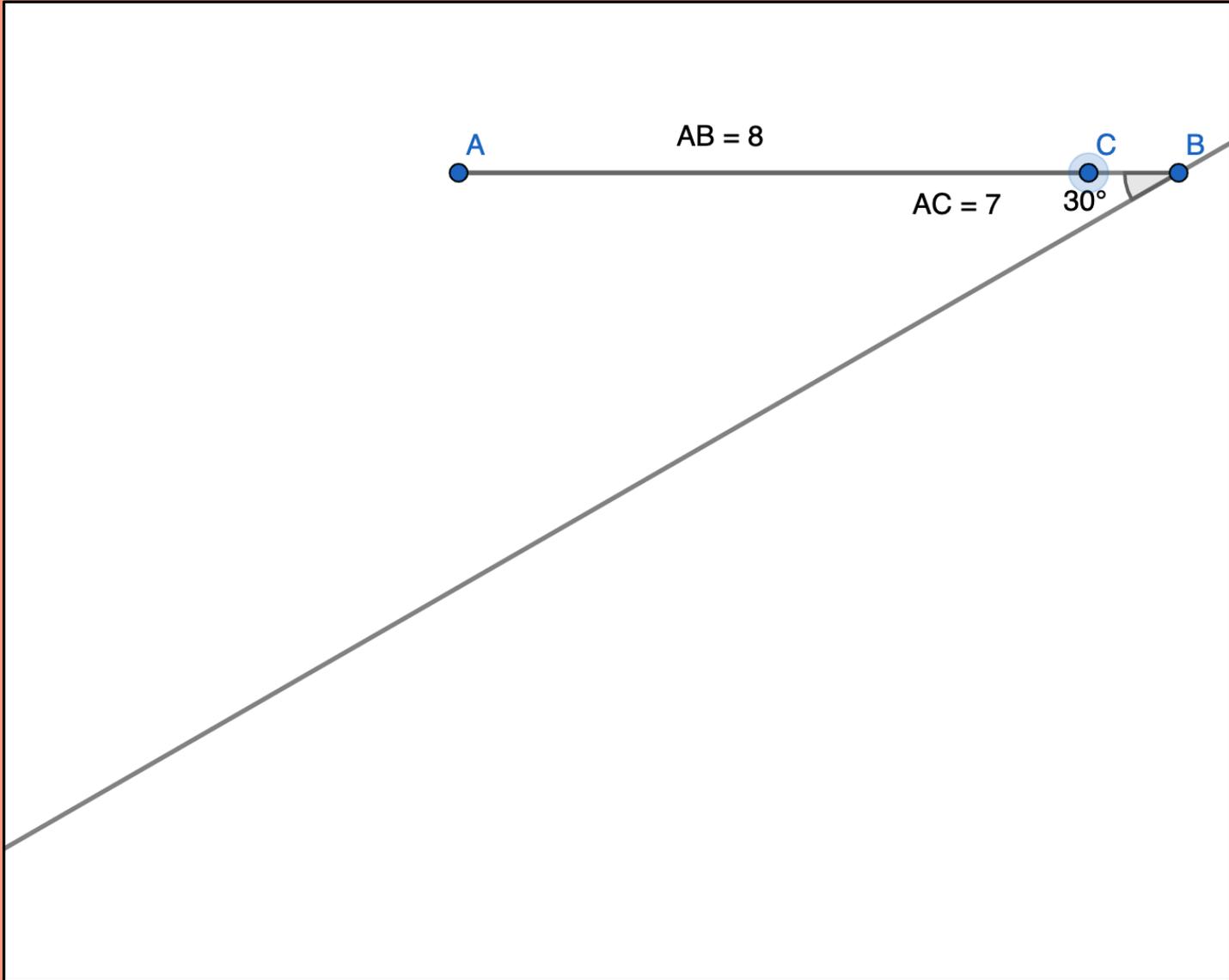
MY COURSE

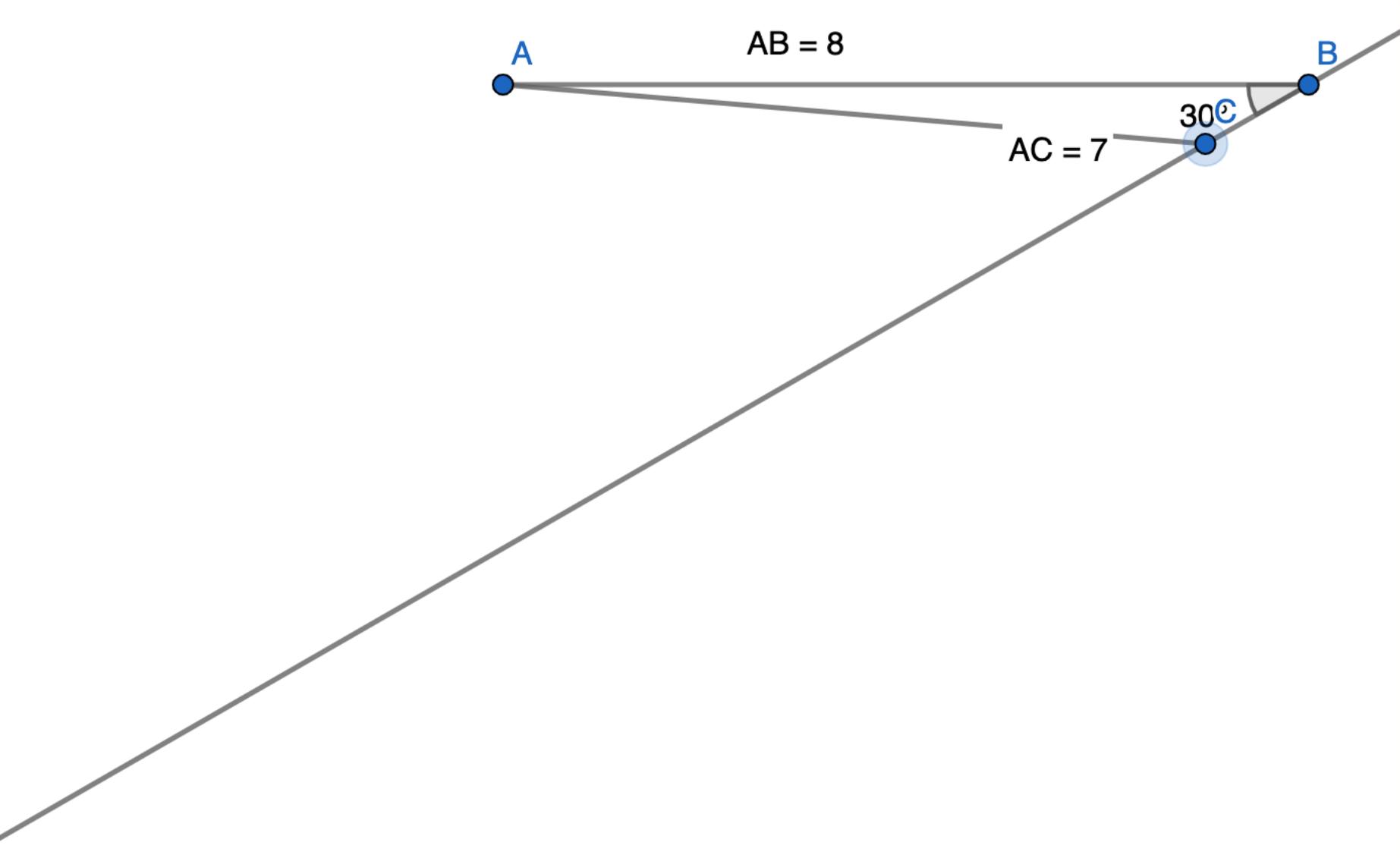
- IN THE LONG AGO (pre-2021)
 - On-Campus
 - Physical Manipulatives and Expensive Interactive Geometry Software
- SPRING 2021
 - Scheduled as 8-week Hybrid
 - Free Online/PDF Text, and Free Geometry Website/App
 - Turned into Hybrid Remote Synchronous (Omicron)
 - Guided-Inquiry in Breakout Rooms
- SPRING 2022
 - 16 Week Remote Synchronous

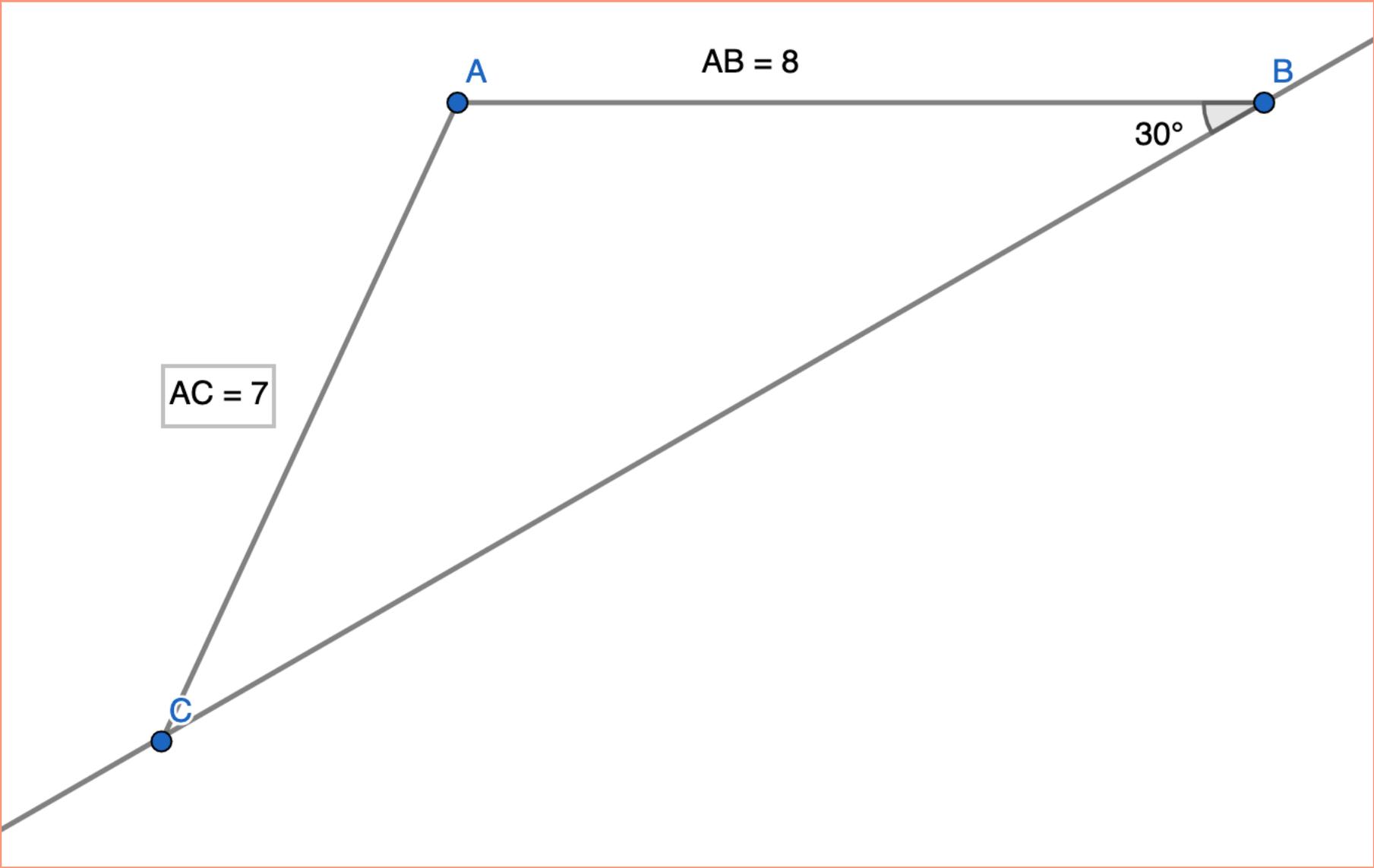
EXAMPLE 1: TRIANGLE CONGRUENCE

- HOW MANY TRIANGLES?
- WHAT CONDITIONS PRODUCE
 - NO TRIANGLES?
 - TWO TRIANGLES?
 - MANY, MANY TRIANGLES?
- WHAT CONDITIONS PRODUCE ONE and ONLY ONE TRIANGLE?







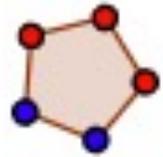


$AB = 8$

$AC = 7$

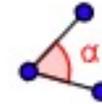
30°

EXAMPLE 2: INTERIOR ANGLES of REGULAR POLYGONS



Regular
Polygon

Measure



Angle

Look for Pattern that Relates Number of Sides to
Sum of Interior Angle Measure

STUDENT RESPONSE

DISCUSSION BOARDS for REFLECTION:

- Answer Prompt
- Reply to at least 2 Classmates' Answers
- I had to shut down discussions because they kept going - students would not move to next assignment.

At what age and with what kinds of activities or exercises could teachers engage students about angles and which angles are equal, supplementary, complementary, etc? Explain your answer.

You may use common core or Oklahoma state standards as support.

Keep your answer short - **maximum of 5 reasonable-length sentences.** Please try as best as you can to use correct spelling and grammar. This is a formal exercise, not a casual conversation. Please do not use common abbreviations (like IMHO for example) or emojis.