

Ch 1.3 - Collinearity, Betweenness, and Assumptions

Objectives:

- Recognize **collinear** and **noncollinear** points.
- Recognize when a point can be said to be **between** two others
- Recognize that **each side** of a triangle is **shorter** than the **sum** of the other two sides
- Correctly interpret geometric diagrams.

Agenda:

- 1) Do Now- Angle Measurement (pull if short block)
- 2) Check HW... Questions?
- 3) Think, pair, share- "To Assume... or Not?"
- 4) Triangle Inequality Activity

HW: p.20 #1-3, 6-13, 15 & Quiz on 1.1-1.3 next class

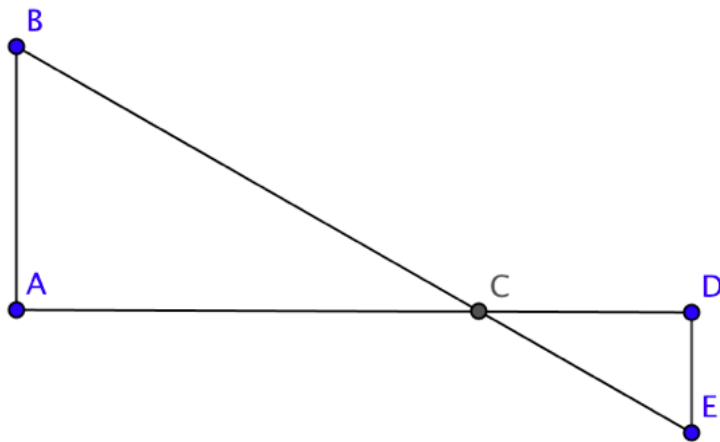
To Assume.... Or Not

When interpreting a diagram, you should...

Assume	Not Assume <i>(Unless it is clearly noted/symbolized)</i>
Straight lines and angles	Right angles
Co-linearity of points	Congruent segments
Betweenness of points	Congruent angles
Relative positions of points <i>(the order from left to right...)</i>	Relative sizes of segments and angles <i>(Obtuse, acute, 3 inches, 48°...)</i>

Example

Use the diagram below to complete the chart. What can be assumed and not assumed?



Assume	Not Assume

511 Triangle Inequality Experiment

Name: _____

Part I: Creating a hypothesis

You have been given 10 strips of different lengths. With your partner, take different combinations of the lengths and try to arrange them into a triangle by attaching the two shorter strips to the endpoints of the longer strip. Some combinations can be used to create a triangle. Some combinations cannot. **Experiment and try to find a pattern.**

Summarize what you discovered. What situations created a triangle? When were you not able to do so?

Part II: Refining your hypothesis

1. Give 3 lengths that **will** make a triangle.

Add the two smaller measurements and compare it (>, =, or <) to the longest measurement.

_____ + _____ _____

Did you get the result you expected according to the summary you wrote?

2. Give 3 lengths that **will not** make a triangle.

Add the two smaller measurements and compare it (>, =, or <) to the longest measurement.

_____ + _____ _____

Did you get the result you expected according to the summary you wrote?

3. Take your ruler and draw a 5-inch line segment below. Can you make a triangle if you attach a 3-inch line segment to one endpoint and a 2-inch line segment to the other end point? (Try to do so, and illustrate what happens below.)

Part III: Conclusion.

Complete the sentences below.

- a.) If the two smallest lengths add to more than the third length, then...
- b.) If the two smallest lengths add to less than the third length, then...
- c.) If the two smallest lengths add to the third length, then...

Triangle Inequality Theorem: