Unit 2 Learning Goal

GEO.B.11.IndDedReasoning
Use inductive and deductive reasoning to make conjectures both verbally, algebraically, and geometrically.

Lesson 2-1 Learning Target

- I can make conjectures based on inductive reasoning

- I can provide counterexamples

Lesson 2-1: " Inductive Reasoning and Conjecture"

A ***conjecture*** is an educated guess.

Looking at several specific situations to arrive at a conjecture is called ***inductive reasoning.***

Example:

Ryan was preparing toast for breakfast. After a few minutes the bread popped up but was not toasted. Make a list of *conjectures* that Ryan can make as to why the bread was not toasted.

Example:

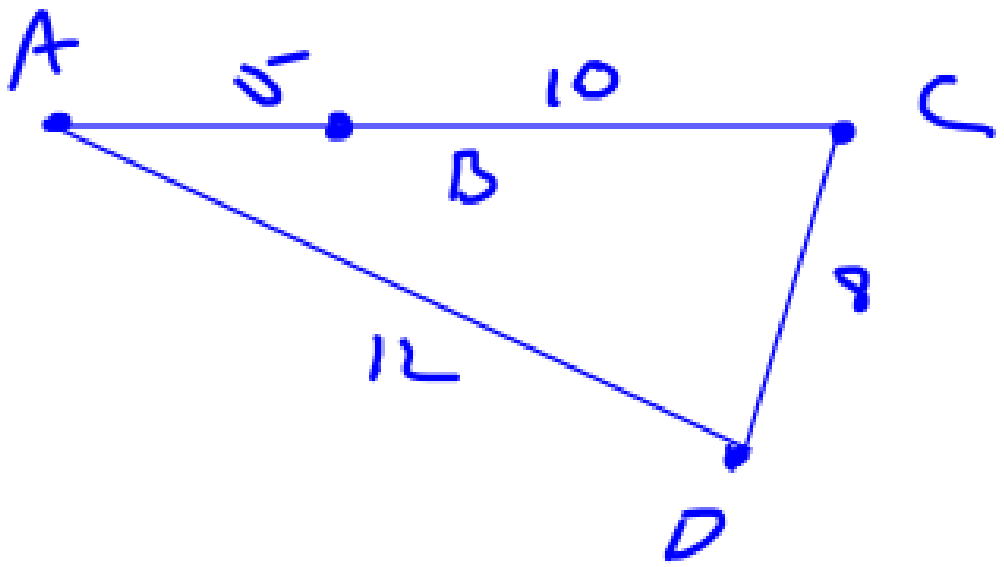
When a door is open, the angle the door makes with the door frame is complementary to the angle the door makes with the wall. Write a conjecture about the relationship of the measures of the two angles.

Example:

For points A, B, C, and D,

AB=5, BC=10, CD=8, and AD=12.

Make a conjecture and draw a figure to illustrate your conjecture.



We sometimes make a conjecture and later determine that the conjecture is false. It takes only one false example to show that a conjecture is not true. This false example is called a ***counterexample.***

Given that the points A, B, and C are collinear and B is between A and C, Jaunita made a conjecture that B is the midpoint of AC. Determine if her conjecture is true or false. Explain your answer.