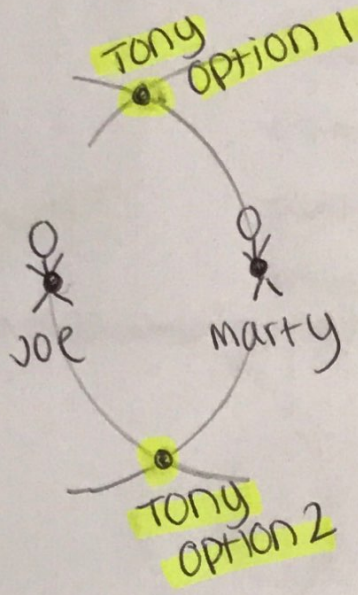
Name: Kelly Date: _____

UNIT 1A **LESSON 2**

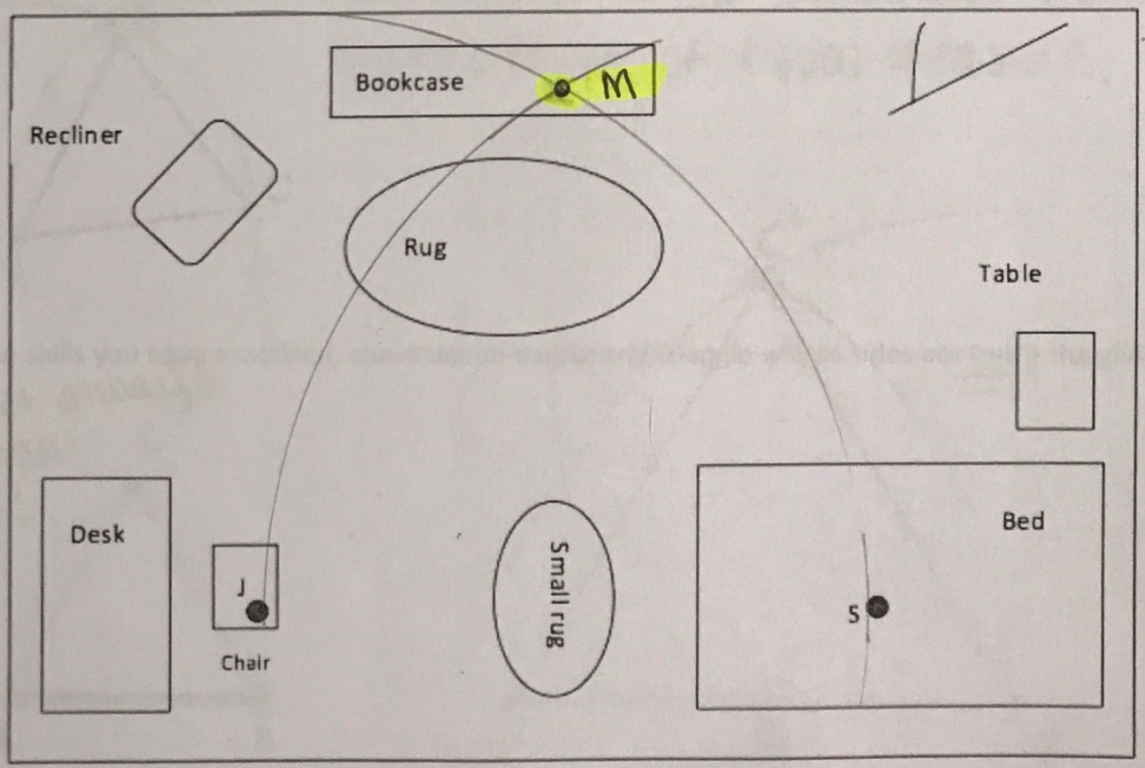
AIM: HOW DO WE CONSTRUCT AN EQUILATERAL TRIANGLE?

TURN-N-TALK: Joe and Marty are in the park playing catch. Tony joins them, and the boys want to stand so that the distance between any two of them is the same. Where do they stand? How do they figure this out precisely? Use your compass and straight edge to help you!



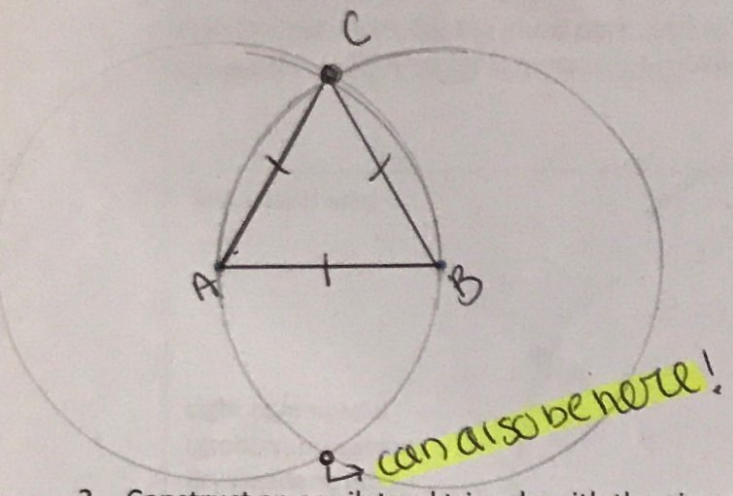
* use compass to ensure the distance between Joe & Marty is the same as Tony

Example #1: Margie has three cats. She has heard that cats in a room position themselves at equal distances from one another and wants to test that theory. Margie notices that Simon, her tabby cat, is in the center of her bed (at **S**), while JoJo, her Siamese, is lying on her desk chair (at **J**). If the theory is true, where will she find Mack, her calico cat? Use the scale drawing of Margie's room shown below, together with (**only**) a compass and straightedge. Place an **M** where Mack will be if the theory is true. the BOOKcase!



EXAMPLES:

1. Construct an equilateral triangle with the given two points.



Steps For Constructing an Equilateral Triangle

1) Place the endpoint of the compass on the first point (A) and op up the compass so that the pencil is on the second point (B).

2) Draw a circle where A is the center and AB is the radius.

3) Now place the endpoint of the compass on the second point (B and open up the compass so that the pencil is on the first point (A

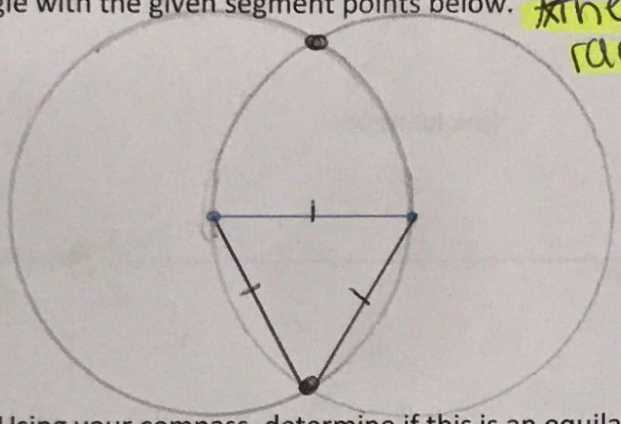
4) Draw a circle where B is the center and BA is the radius.

5) Label the intersection of the two circles (C).

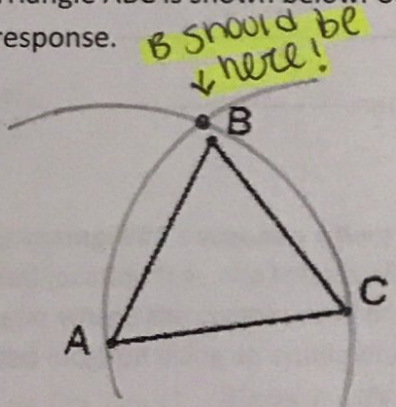
6) Connect AB, BC, and CA to construct an equilateral triangle.

2. Construct an equilateral triangle with the given segment points below.

*the circles have equal radii → 3 equal sides!



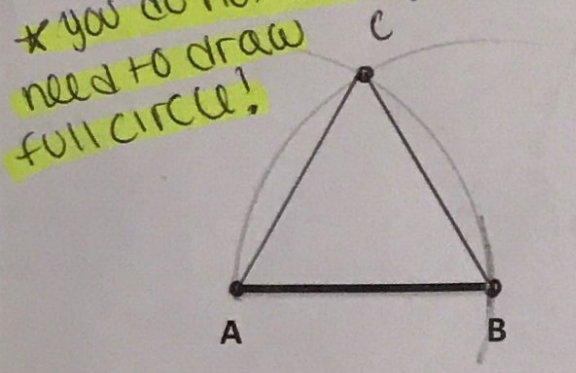
3. Triangle ABC is shown below. Using your compass, determine if this is an equilateral triangle. Justify your response.

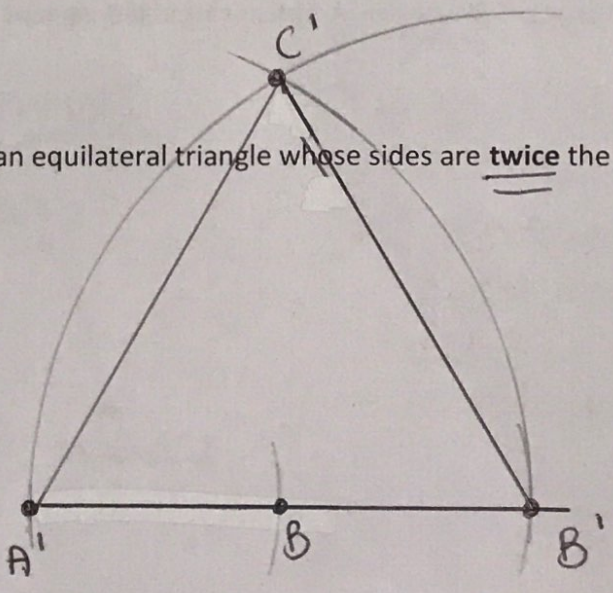


NO, △ABC is NOT an equilateral △ sides are not of equal measure.

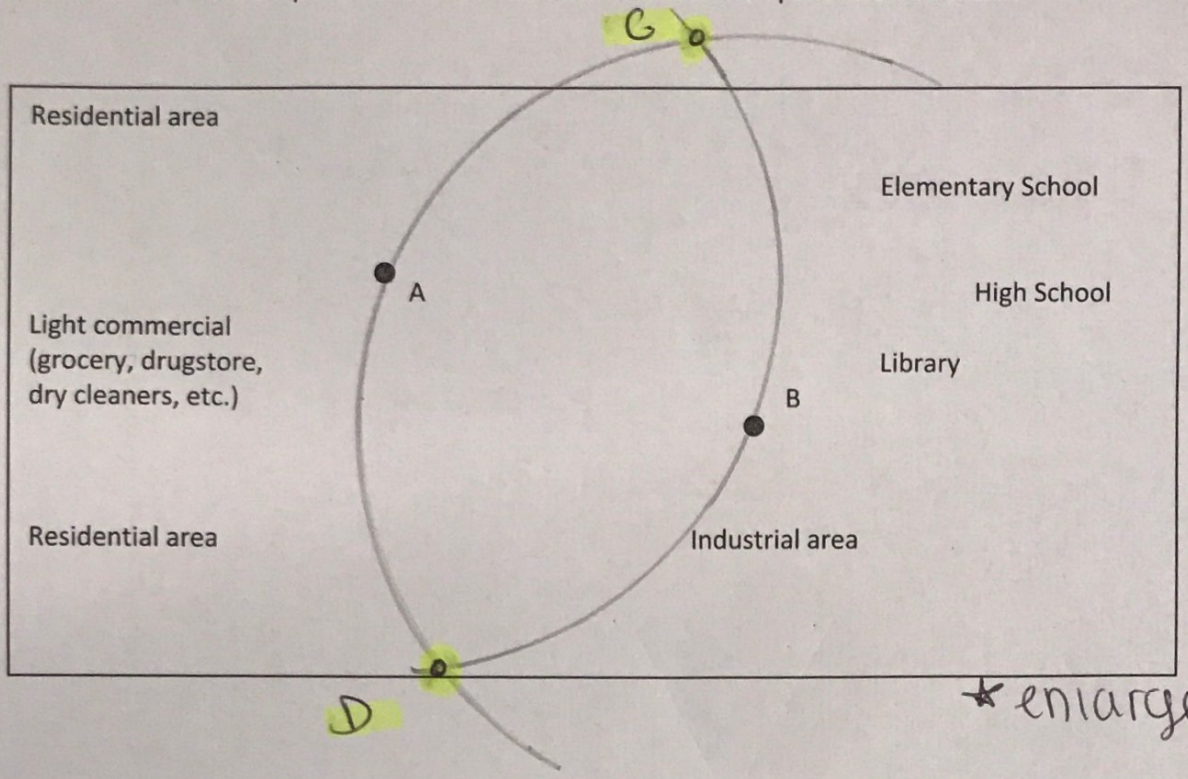
4. Using the skills you have practiced, construct an equilateral triangle whose sides are **twice** the given length.

*you do not always need to draw full circle!





1. Cedar City boasts two city parks and is in the process of designing a third. The planning committee would like all three parks to be equidistant from one another to better serve the community. A sketch of the city appears below, with the centers of the existing parks labeled as A and B. Identify two possible locations for the third park, and label them as C and D on the map. ~~Clearly and precisely list the mathematical steps used to determine each of the two potential locations.~~



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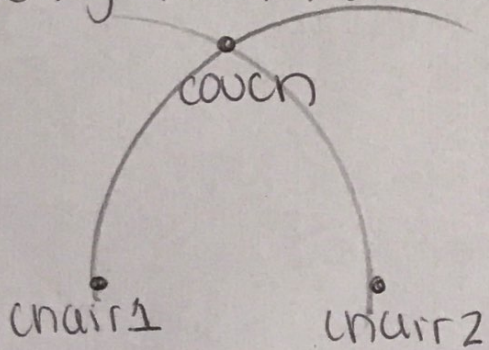
UNIT 1 **LESSON 2**

EXIT TICKET

Using example #1's scenario where we used the construction of an equilateral triangle to help determine a needed location (i.e., the friends playing catch in the park and the sitting cats). Can you think of another scenario where the construction of an equilateral triangle might be useful? Articulate how you would find the needed location using an equilateral triangle.

Ex) Equally spacing furniture!



↳ 1) set chairs a certain distance

2.) use equilateral Δ construction to determine where couch should be