

Name: _____

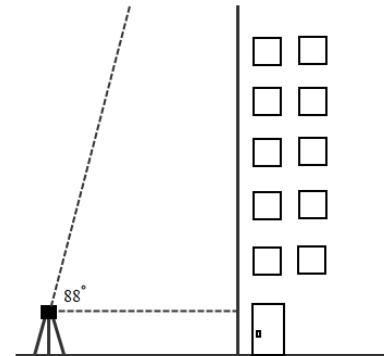
Date: _____

Scale Drawings

- We use scale drawings to look at objects whose actual size is either too large or too small.
- A scale drawing has the same shape but not necessarily the same size as the original figure.
- What are some objects you think we can use scale drawings for?

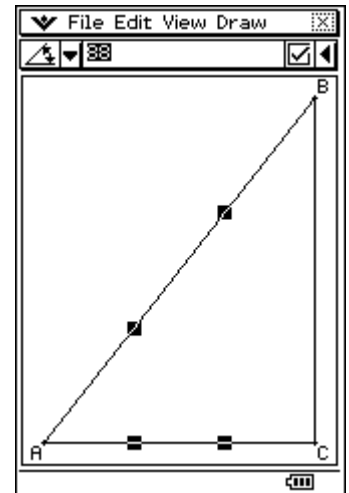
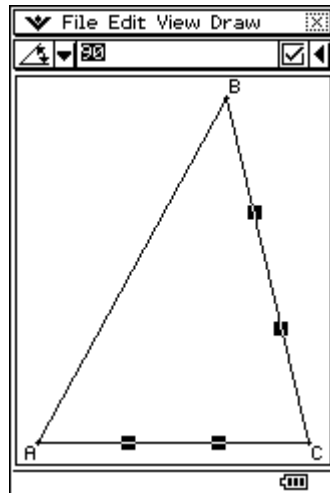
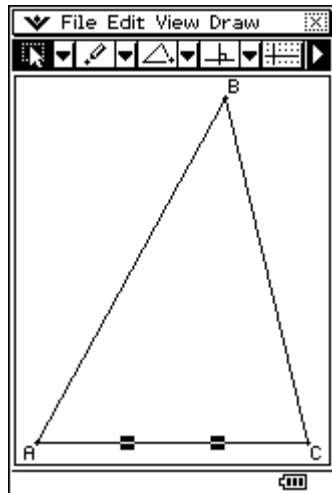
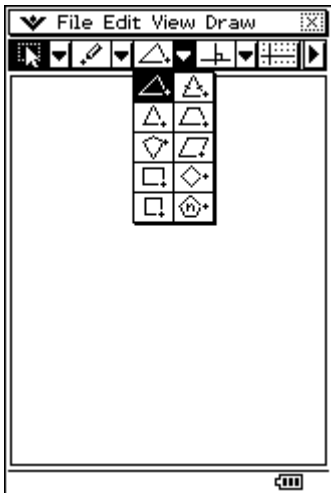
A group of students want to know how tall a city skyscraper is but don't have the ability to measure it with a tape measure. Fortunately one of the them has surveyor equipment and from a distance of 45 feet read that the angle to the top of the tower is 88 degrees. Use this information to draw a scale drawing and find the actual height of the skyscraper. (Assume that the angle the skyscraper makes with the ground is 90 degrees and let the surveying equipment be 4 feet above the ground.)

1. Consider the sketch of the situation and decide on a scale factor. (Try to fit the drawing on this page.)
2. Draw a scale drawing using your scale factor, leaving the angle measure the same. Extend the height of the skyscraper and the dotted line to the top of the skyscraper so that the two lines meet at a point.
3. Measure the side of the triangle that represents the height of the skyscraper and use your scale factor to convert it back into feet.



Now use the ClassPad.

1. From the start menu (M) select **G**. Select **Edit/Clear All** if needed.
2. Tap the third n and select **O**. Tap anywhere in the geometry window.
3. Select the side that represents 45ft, tap **u**, then change the length to be 45ft and press **E**.
4. Tap side CB to have both sides selected and enter 90 degrees, then press **E**.
5. Tap on white space to deselect the sides & select sides AC & AB; enter 88 degrees & press **E**.
6. Deselect the sides and select side CB.



How tall is the skyscraper?

(Round to the nearest foot & don't forget to add the height of the surveyor equipment)

_____ ft

What measurements stay the same in a scale drawing? _____

A group of students decide to measure the width of a river on their camping trip, but all they have is a compass

(with side length 1ft) and lots of string. They put two stakes *about* 25ft apart on one side of the river and one stake directly across the river from one of the stakes. Using the compass they measure the angles of the two strings to the stake across the river to be 90 degrees and 55 degrees. Make a scale drawing using a good scale factor to determine the width of the river.

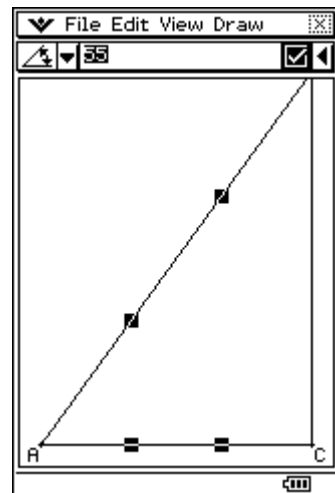
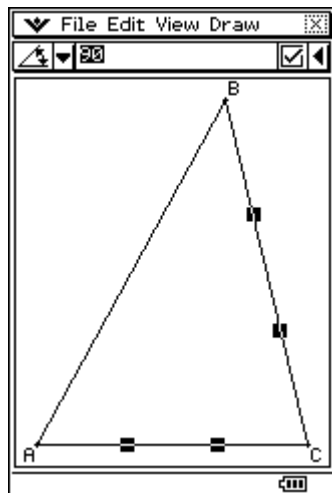
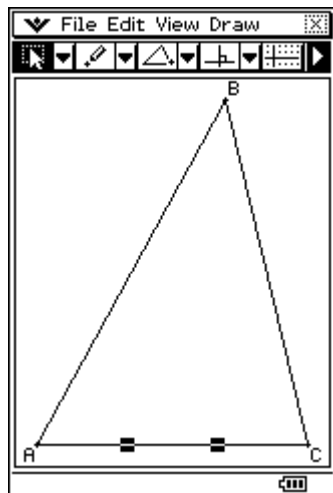
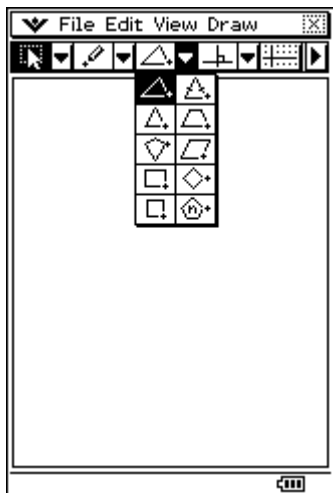
1. Draw a sketch of the situation:

2. Decide on a scale factor that will fill the page below.

3. Draw a scale drawing using the measurement from step 2. Find the width of the river by using your scale factor.

Now use the ClassPad.

1. From the start menu (M) select **G**. Select **Edit/Clear All** if needed.
2. Tap the third n and select **O**. Tap anywhere in the geometry window.
3. Select the side that represents 25ft, tap u, then change the length to be 25ft and press **E**.
4. Tap side CB to have both sides selected and enter 90 degrees, then press **E**.
5. Tap on white space to deselect the sides & select sides AC & AB; enter 55 degrees & press **E**.
6. Deselect the sides and select side CB.



How wide is the river? (Round to the nearest foot) _____ft