

# Sailing and Scaling

In the box on the next page, do your best to draw a sail boat. You can choose to draw one like the one displayed below, or you can let your creative juices flow and design your own sail boat. However, you must follow the given constraints.

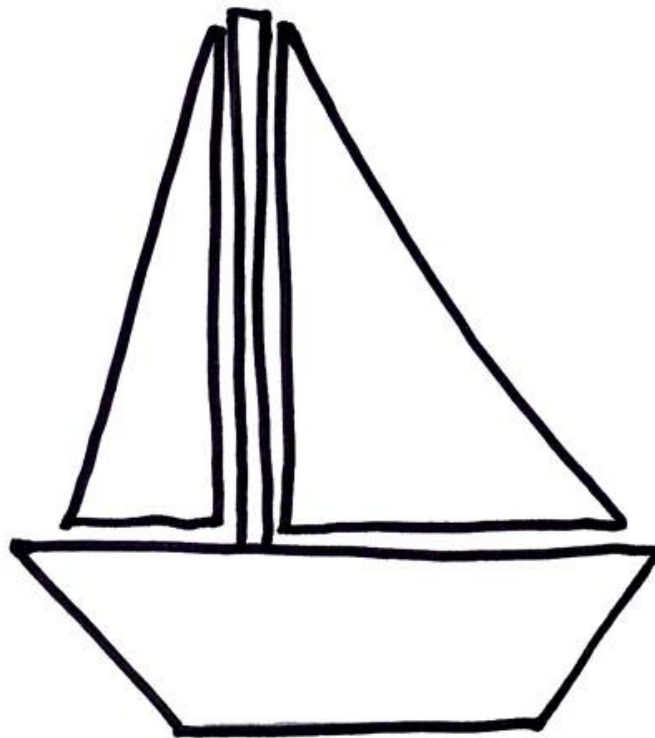
Constraints:

**Three triangles must be included in the design of your sail boat, and you will need to use a protractor to create them precisely.**

One triangle must have three angles of the same degree,  $60^\circ$ .

A second triangle must have two angles that are  $45^\circ$  and one that is  $90^\circ$ .

Finally, a third triangle must have angles of  $40^\circ$ ,  $60^\circ$ , and  $80^\circ$ .



*(Don't make your sail boat too complicated or detailed because you will have to draw your creation again, only smaller.)*

Name: \_\_\_\_\_

Date: \_\_\_\_\_

	A	B	C	D	E
1					
2					
3					
4					
5					

Now that you have finished your original sailboat, use the labeled squares to help you transfer your original creation to the one on the next page.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

	A	B	C	D	E
1					
2					
3					
4					
5					

Your smaller drawing should look just like your original drawing. This is called scaling the image down.

- a. Can you determine the scale used to create the smaller picture from the larger picture? Show any work and explain your reasoning. *Hint: Consider the perimeter and area of the two drawing spaces. You may need to use a ruler.*

Name: \_\_\_\_\_

Date: \_\_\_\_\_

- b. If each box in the original sail boat drawing you created represented 1 foot, how long would your boat be in feet?

Is this scale reasonable? Why or why not?

- c. Using the same scale as above (1 foot = 1 box), approximately what would the area of the side of your boat be in feet? Remember to explain or show how you arrived at your answer.