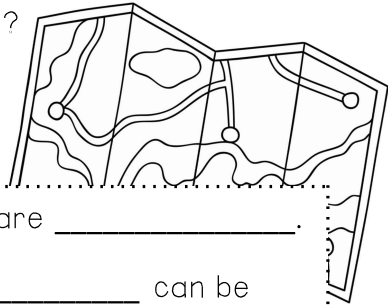


# SIMILAR FIGURES AND SCALE DRAWINGS

Jessie is using a map to travel from her home to the state capital. She measures on the map to find the route is 4 inches long. The scale of the map says that 1 inch is equal to 20 miles. How could Jessie determine the number of miles she will travel to the state capital?



## FINDING A MISSING SIDE LENGTH

- Similar figures have corresponding side lengths that are \_\_\_\_\_.
- When two figures are similar, a proportion or \_\_\_\_\_ can be used to find the length of an unknown side.

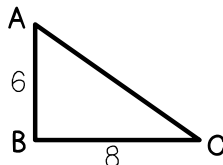


FIGURE 1

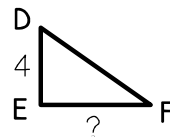
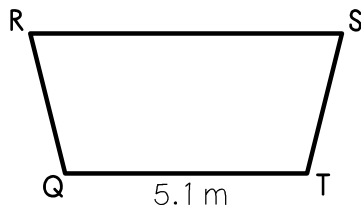
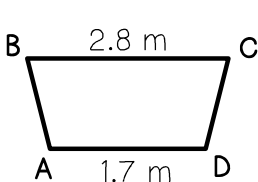


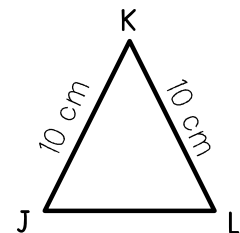
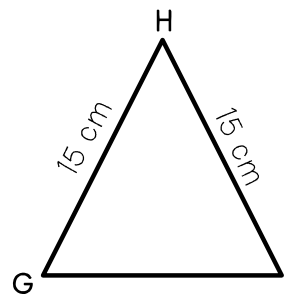
FIGURE 2

Use your understanding of similar figures to answer the questions below.

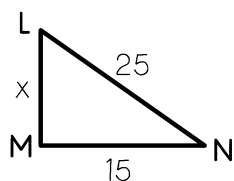
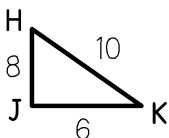
1. Trapezoid ABCD is similar to trapezoid QRST. What is the length of  $\overline{RS}$ ?



2. The perimeter of triangle GHI is 40 cm. If the triangles are similar, then what is the length of  $\overline{JL}$ ?



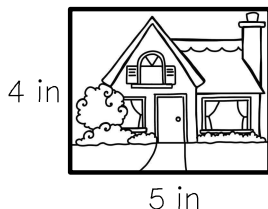
3. Triangle HJK is similar to Triangle LMN. Bethany says there is more than one proportion that can be used to determine the missing side length,  $x$ . Do you agree? Justify your solution.



# SCALE DRAWINGS

- Two and three-dimensional objects can be represented with a scale drawing or \_\_\_\_\_.
- Ex: \_\_\_\_\_

4. The photo below will be enlarged to form a 16 by 20-inch print. What is the scale factor needed to enlarge it?



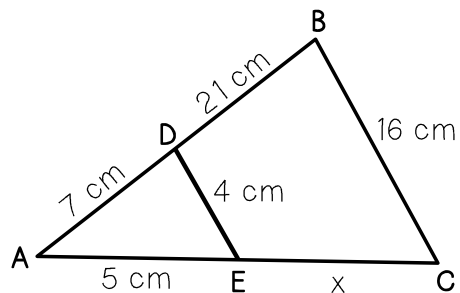
5. A tree casts a shadow that is 9 feet long at the same time a person standing nearby casts a shadow that is 3 feet long. If the person is 5.5 feet tall, how tall is the tree?

6. A map of the state of Texas shows the scale to be 1 inch = 80 miles. The distance between Austin and Corpus Christi is 232 miles. How far apart will the two cities be on the map?

7. Suzie walks 1.5 miles to school. When she looks at the map it shows the scale to be 1 cm = 0.5 miles. What is the distance between Suzie's house and her school on the map?

8. Abby studies a map of Italy that shows a scale of 0.5 cm = 10 km. The Pantheon and the Spanish Steps are 0.4 cm apart on the map. The Trevi Fountain is located exactly halfway between the Pantheon and the Spanish Steps. What is the distance in kilometers from the Trevi fountain to the Spanish Steps?

9. Triangle ABC is similar to triangle ADE. What is the length of EC?

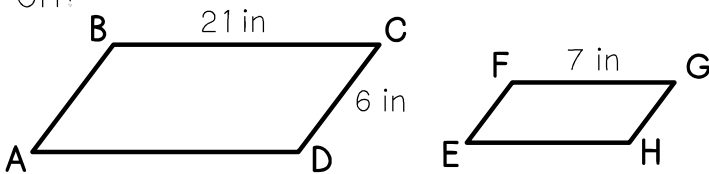


## SIMILAR FIGURES AND SCALE DRAWINGS

Set up and solve for the missing side length of each set of figures below. Use the number bank to help you check your solutions. Not all numbers will be used.

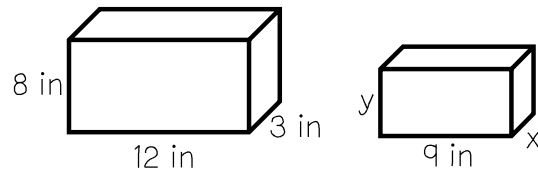
18    4.5    2    7    20    2.25    54    16    6    3.5    12    10

1. Parallelogram ABCD is similar to parallelogram EFGH. What is the length of GH?



$\overline{GH}$ : \_\_\_\_\_

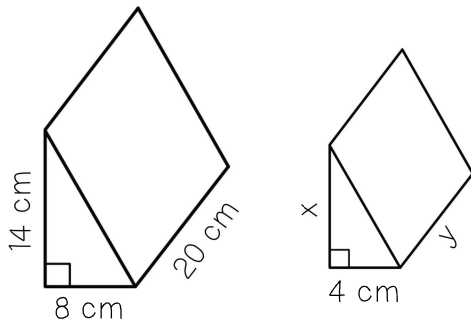
2. The rectangular prisms shown below are similar. What are the values of x and y?



x: \_\_\_\_\_

y: \_\_\_\_\_

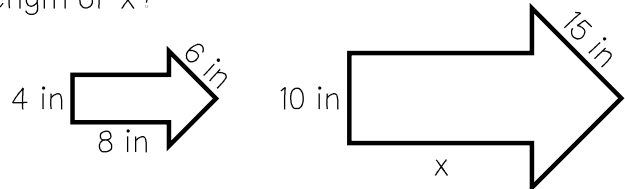
3. The triangular prisms shown below are similar. What are the values of x and y?



x: \_\_\_\_\_

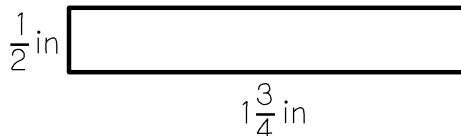
y: \_\_\_\_\_

4. The figures below are similar. What is the length of x?



x: \_\_\_\_\_

5. The figure below is a scale drawing of a garden. If the scale used is  $\frac{1}{4}$  inch = 3 feet, then what is the perimeter of the actual garden?



perimeter: \_\_\_\_\_

6. A two-story building measures 21 feet from the ground. A scale model shows the building to be 3 inches tall. How many inches would an 84-foot building be in the model?

height: \_\_\_\_\_