

## Indicators

### Objective:

**3.03 Use scaling and proportional reasoning to solve problems related to similar and congruent polygons.**

Vocabulary and Resources		
corresponding parts	cross product	dilation
ratio	indirect measurement	scale factor
proportion	transformation	

**A.** A tennis court is 27 feet wide and 78 feet long and the net is 3 feet high at the center of the court. A table tennis table is 5 feet wide and 9 feet long and the net is 6 inches high. Are a table tennis table and net proportional to a tennis court and net? Explain your answer.

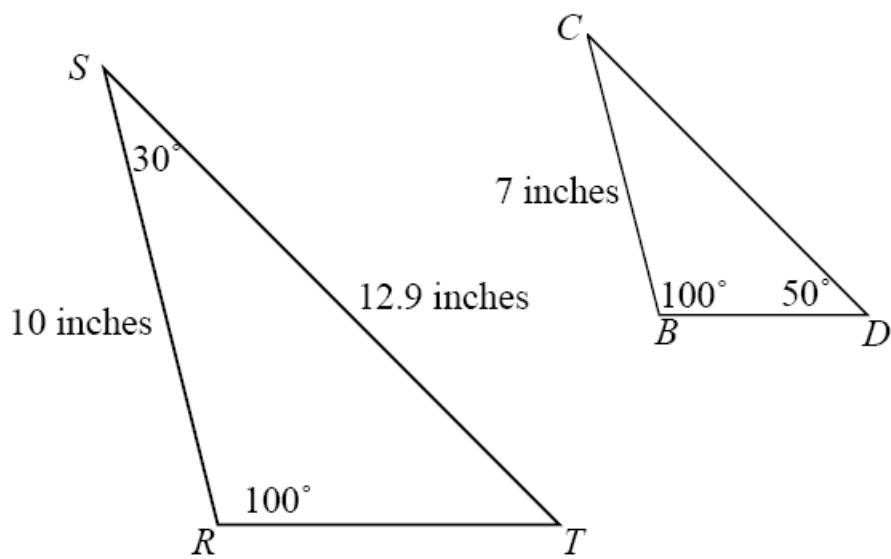
If you wanted to make a true miniature version of a tennis court and you used the width of the table tennis table (5 feet), how long would it be?

How high would the net be? If you were to make a scale model of yourself for your miniature tennis court, how tall would the model be?

(Adapted from SREB publication *Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do*)

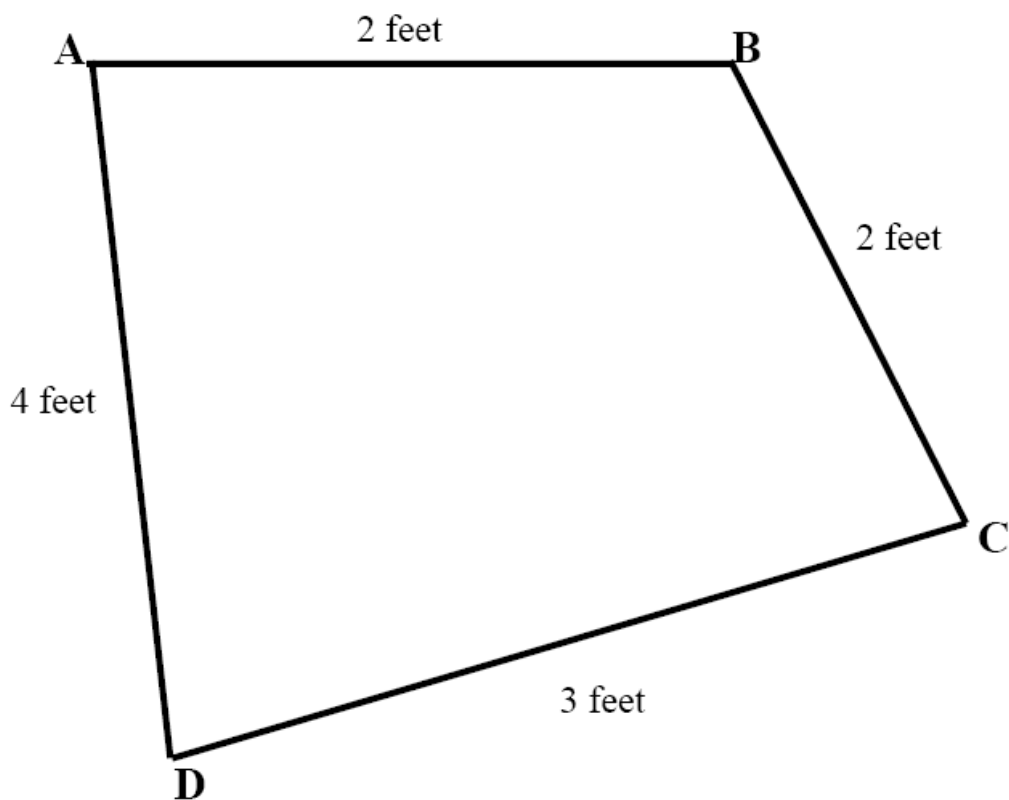
**B.** Susan's dad wants to build a dining room table for the family that is similar to the one in Susan's doll house. The doll house table top measures  $1\frac{1}{2}$  inches by  $4\frac{1}{2}$  inches. If the length of the table needs to be 6 feet, how wide should the table be?

C. Compare the two similar triangles below.



What is the measure of segment  $CD$ ?  $\angle T$ ?  $\angle C$ ?

**D.** A model of Glaswick Park was drawn for the town council to consider.



If the park's longest side is 360 yards long, and the model is a scale drawing of the actual park, what are the dimensions of the other sides?

**E.** Triangle  $ABC$  is similar to triangle  $DEF$ .

- side  $AB$  is 12 ft long
- side  $BC$  is 8 ft long
- $m\angle B$  is  $50^\circ$
- side  $DF$  is 130 ft long
- side  $DE$  is 180 ft long
- $m\angle F = 70^\circ$

Find the measures of  $\angle A$ ,  $\angle C$ ,  $\angle D$ ,  $\angle E$ , sides  $AC$  and  $EF$ .