Date _____

# 7.6 Composite Shapes and Figures

Focus: measuring, rounding, proportional reasoning, problem solving

Chapter 7

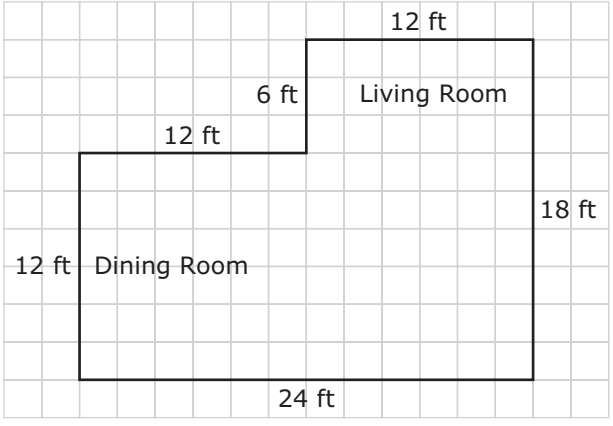
| Warm Up | |
|---|---|
| **1.** Six inches is what fraction of a foot? _____ | **2.** What is the approximate Imperial equivalent of 3.78 L? _____ |
| **3.** How many square feet make up 1 square yard? _____ | **4.** Which area is greater, 1 $m^2$ or 1 $yd^2$? _____ |
| **5.** Round $87.99 to the nearest<br>**a)** $1. _____<br>**b)** $10. _____<br>**c)** $100. _____ | **6.** Calculate the tax on $87.99. |

Go to pages 187–188 to write the definition for **composite shape** in your own words.

## Determine the Area of a Composite Shape

- A **composite shape** is made of more than 1 shape. For example, the blueprint below consists of a rectangle and a square.

**1.** Felicia recently moved into a condo in downtown Ottawa. She wants to carpet her dining room and her living room. Below is a sketch of the area.

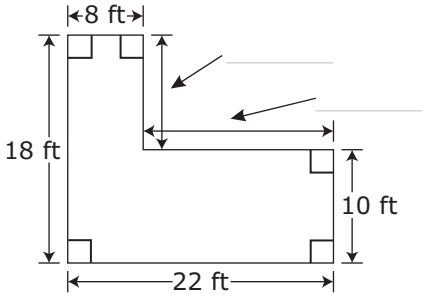



How can Felicia determine how much carpet is needed?

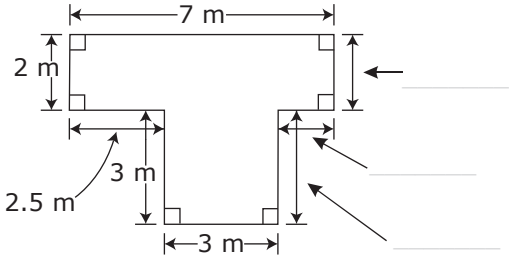
_____

**2.** Label the missing dimensions for each of the following composite shapes.

**a)**




**b)**

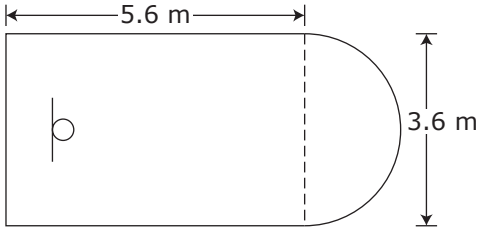



**3.** Divide the shapes above into groups of regular shapes.

**4.** Determine the area of each of the composite shapes in #2.

**a)** **b)**

**5.** The key on a basketball court is in the shape of a rectangle. The free-throw area is in the shape of a semicircle. Often, these areas are painted so that they stand out from the rest of the court.




**a)** Recall the formula for the area of a circle. _____

**b)** Calculate the area to be painted. Round to 2 decimal places.

Key: Free Throw Area:

Total Area:

**c)** How much paint do you need to paint both keys on the court with 2 coats?

Chapter 7

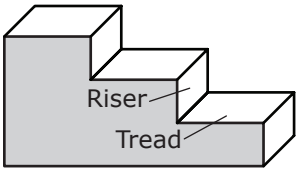
## Composite Figures

**6. a)** Use linking cubes to create a model of a set of 3 steps. The steps have 12-inch treads and 6-inch risers. The steps are 3 feet wide.

**b)** The scale of your model is 1 square : _____.

**c)** The surface of _____ squares represents 1 square foot.

**d)** The volume of _____ cubes represents 1 cubic foot.




**7. a)** If the steps are indoors, carpet could go from the tread of the top step down to the bottom of the riser of the bottom step. Shade the area to be covered on the drawing above.

**b)** Calculate the area of the carpet.

**c)** A flooring store sells carpet for $89 per square yard. How many square yards would you need to buy?

**d)** Calculate the before-tax cost of the carpet.

**e)** Calculate the after-tax cost of the carpet.

**8.** If the steps are outdoors, they could be made of concrete that is poured into a wooden frame.

**a)** Determine the volume of the steps.

**b)** Concrete is often ordered in cubic yards. Convert your answer from part a) to cubic yards.



## ☑ Check Your Understanding

**1.** You have volunteered at a daycare to help build a wooden sandbox for the children.

**a)** Design a composite rectangular shape. Include dimensions.



**b)** How many feet/metres of wood do you need to build the walls?

**c)** How many square feet/square metres of plywood do you need to build the floor of the sandbox?

**d)** How high will the walls of the sandbox be? _____

**e)** How many cubic yards/cubic metres of sand do you need to fill the sandbox?