or 8

The base of the triangle is
10 − 6 or 4 inches.

es.

5 m

10 m   7 m

7 m

$\frac{1}{2}(2)(3)$

$\frac{2}{2} = 3$

$\frac{3}{2}$

$10 \times 7 = 70$

$70 - 3 = 67$

$A = \frac{1}{2}(4)(4)$ or 8

The base of the triangle is
10 − 6 or 4 inches.

square inches.

s to find out.

e.

b.

5 m

10 m   7   7 m

7 m

ft

1

3
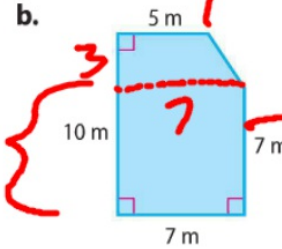
$\frac{1}{2}(5+7)(3)$

$= 18$

$7 \times 7 = 49$

$49 + 18$
$= 67$

Got It? Do this problem to find out.

d.

2 ft
6 ft
7 ft
6 ft
8 ft
1 ft
5
5

$6 \times 7 = 42$

$6 \times 8 = 48$

90

$90 - 25$

90
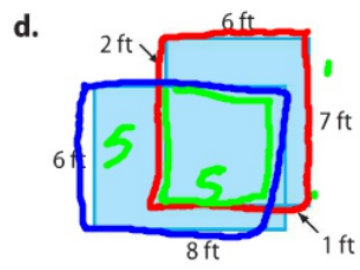
d. **65 ft²**

1. The manager of an apartment complex will install new carpeting in a studio apartment. The floor plan is shown at the right. What is the total area that needs to be carpeted? (Examples 1 and 2)

Show your work.

342.5 ft²

12 ft | 8 ft
5 ft
10 ft
25 ft

$28 \times 30 = 840$

$\begin{array}{r} 250 \\ + 92.5 \\ \hline 342.5 \end{array}$

2. Finn Fitness has an entrance to the locker room from both the dance studio and the weight room. What is the total area of Finn Fitness? (Examples 3 and 4)

2,030 ft²

28 ft
Weight Room
30 ft
16 ft
Locker Room 14
14 ft
14
42 ft
Dance Studio
33 ft

$10 \times 25 = 250$

$\frac{1}{2}(12 + 25)(5)$
$= \frac{1}{2}(37)(5) = 92.5$

$14 \times 14 = 196$

$42 \times 33 = 1386$

1386

$\begin{array}{r} 1386 \\ + 840 \\ \hline 2226 \end{array}$

$\begin{array}{r} 2226 \\ - 196 \\ \hline 2030 \end{array}$

Guided Practice

Check ✓

1. The manager of an apartment complex will install new carpeting in a studio apartment. The floor plan is shown at the right. What is the total area that needs to be carpeted? (Examples 1 and 2)
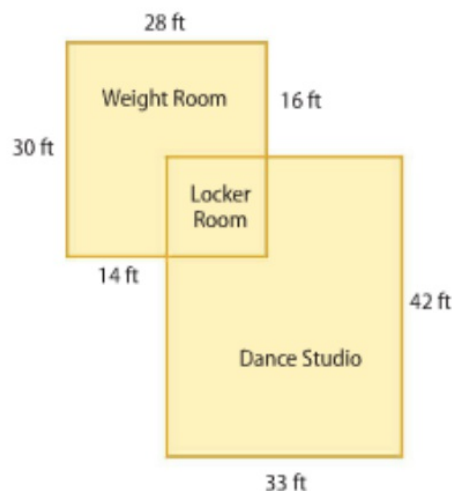
Show your work.

342.5 ft²

↤ 12 ft ↦ 8 ft ⌐
5 ft
10 ft
↤ 25 ft ↦

2. Finn Fitness has an entrance to the locker room from both the dance studio and the weight room. What is the total area of Finn Fitness? (Examples 3 and 4)

2,030 ft²

28 ft

Weight Room   16 ft

30 ft

Locker
Room

14 ft

Dance Studio   42 ft

33 ft

3. **Building on the Essential Question** How can you decompose figures to find area?

Sample answer: Decompose figures into areas that you know how to find. Then add to find areas of composite figures, or subtract areas of overlapping figures.

Rate Yourself!

Are you ready to move on?
Shade the section that applies.

I have a few questions. | I'm ready to move on. | I have a lot of questions.
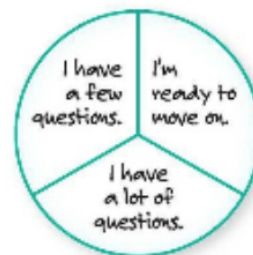
For more help, go online to access a Personal Tutor.

Tutor 💬

Find the area of each figure. Round to the nearest tenth if necessary. (Example 1)

1 $58.6\ in^2$

5.3 in.
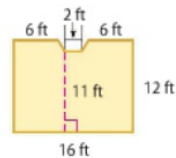
8 in.

4 in.

8 in.
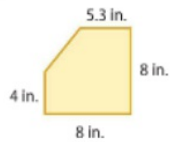
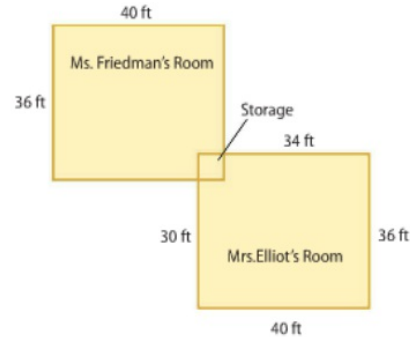Show your work.

2. $87.5\ cm^2$

15 cm

7 cm

10 cm
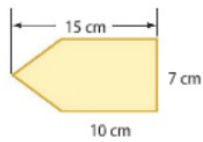
3. The floor plan of a kitchen is shown at the right. If the entire kitchen floor is to be tiled, how many square feet of tile are needed? (Example 2)

$189\ ft^2$

2 ft

6 ft   6 ft

11 ft   12 ft

16 ft

4. Ms. Friedman and Mrs. Elliot both teach sixth grade math. They share a storage closet. What is the total area of both rooms and the storage closet? (Examples 3 and 4)
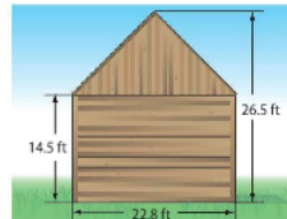
$2,844\ ft^2$

40 ft

Ms. Friedman's Room

36 ft

Storage

34 ft

30 ft   36 ft

Mrs.Elliot's Room

40 ft

5 The diagram shows one side of a storage barn.

a. This side needs to be painted. Find the total area to be painted. $467.4\ ft^2$

Show your work.

26.5 ft

14.5 ft

22.8 ft

b. Each gallon of paint costs $20 and covers 350 square feet. Find the total cost to paint this side once. Justify your answer.

$467.4 \div 350 \approx 1.34$; Since only whole gallons of paint can be purchased, you will need 2 gallons of paint. At $20 each, the cost will be 2 × $20 or $40.

6. **CCSS** **Reason Abstractly** Refer to the graphic novel frame below for Exercises a–b.

a. The first clue was hidden in a triangular section of the park with an area of 600 square feet. The second clue was hidden in a rectangular section with a height of 30 feet and a width of 24 feet. What was the area of the rectangular section? **720 ft^2**

b. What is the total search area? **1,320 ft^2**

7. 🔴 **Persevere with Problems** Describe how to separate the figure into simpler figures. Then estimate the area. One square unit equals 2,400 square miles. Justify your answer.

Sample answer: Add the areas of a rectangle and a triangle. Area of rectangle: $3 \times 4 = 12$; Area of triangle: $\frac{1}{2} \times 3 \times 3 = 4.5$; $12 + 4.5$ $= 16.5$. So, an approximate area is $16.5 \times 2,400$ or $39,600$ mi^2.

NEVADA

8. 🔴 **Identify Structure** Describe how you would find the area of the figure shown at the right. **Sample answer: Separate it into a rectangle and a triangle, find the area of each, and add.**

9 cm
5 cm
7 cm
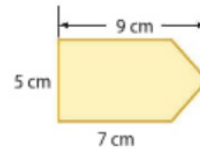
9. 🔴 **Make a Conjecture** Refer to the composite figure at the right. Make a conjecture about how the area of the composite figure changes if each dimension given is doubled. Then test your conjecture by doubling the dimensions and finding the area.

The area is multiplied by 4. Original area: 159.9 cm^2; new area: 639.6 cm^2

5.5 cm
7 cm
16.4 cm