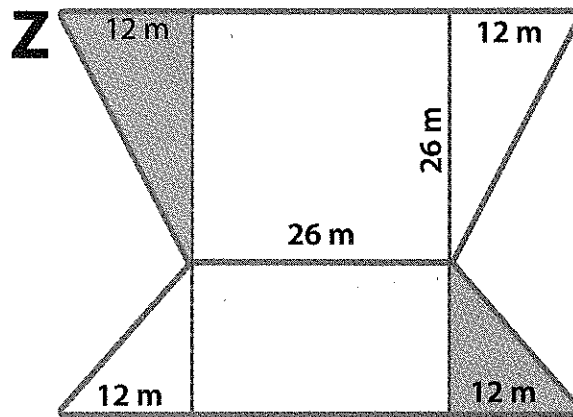
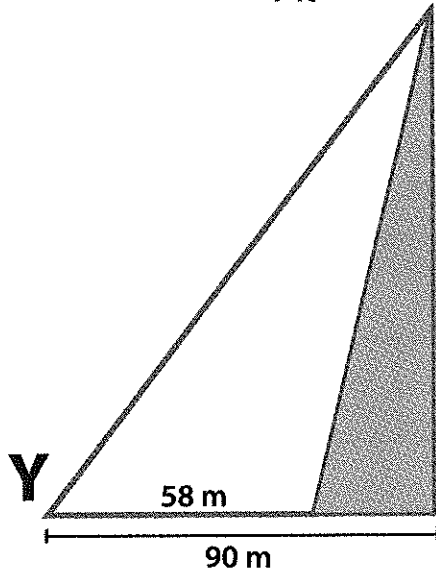
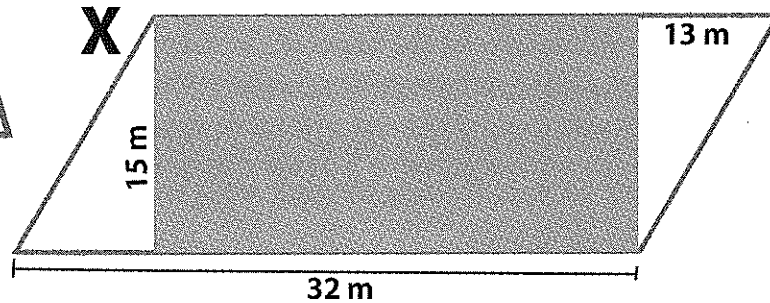


Solve the area problems about spaces W, X, Y, and Z by combining shapes or taking them apart.



6. In figure W (a parallelogram), the base of the shaded right triangle is 2.4 feet. What is the area of the shaded portion?
7. Area of non-shaded portion of parallelogram W:
8. Area of parallelogram X:
9. Area of shaded portion of figure X:
10. Is this true: the area of shaded X > area of non-shaded X?
11. The shaded portion of figure Y (a right triangle) has an area of 1,600 square meters. What is the area of the non-shaded portion?
12. The height of the entire figure Z is 38 meters. What is the area of the lower shaded right triangle in figure Z?
13. Color an area in figure Z that has an area of 312 square meters.
14. Circle the portion with the greater area:
  - a. sum of grey-shaded triangles in figure Z (Height of figure Z is 38 meters.)
  - b. shaded area in figure Y (See problem 11.)

Name \_\_\_\_\_

Use with page 92.

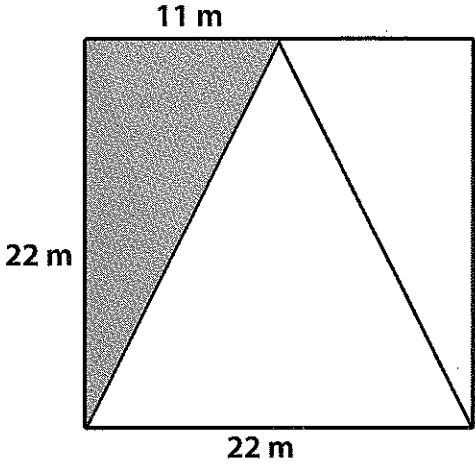
# POGO PRACTICE

Lucinda has dreams of becoming an extreme pogo jumper. Extreme pogo (or Xpogo) is a sport that involves lots of tricks and jumps on tall, springy pogo sticks. Lucinda will practice on any hard surface she can find.

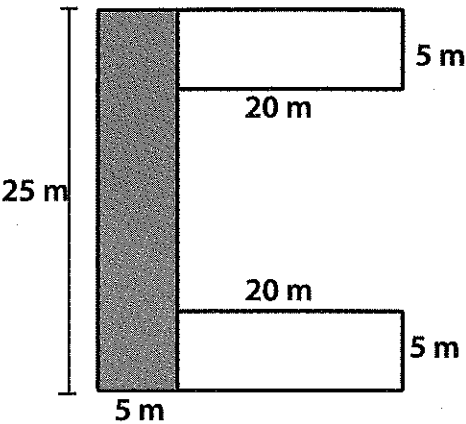
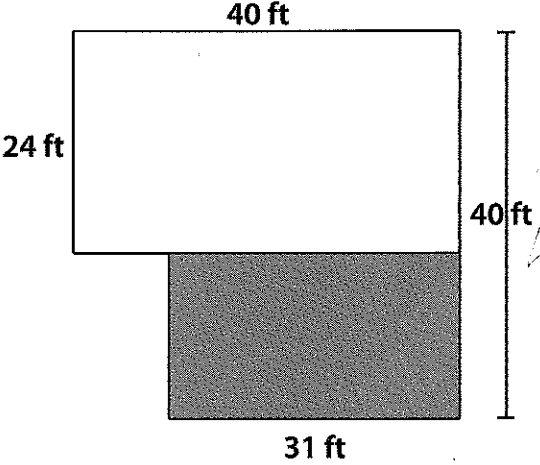
Here are some of the places Lucinda practices. Solve the area problems by combining shapes or taking them apart.



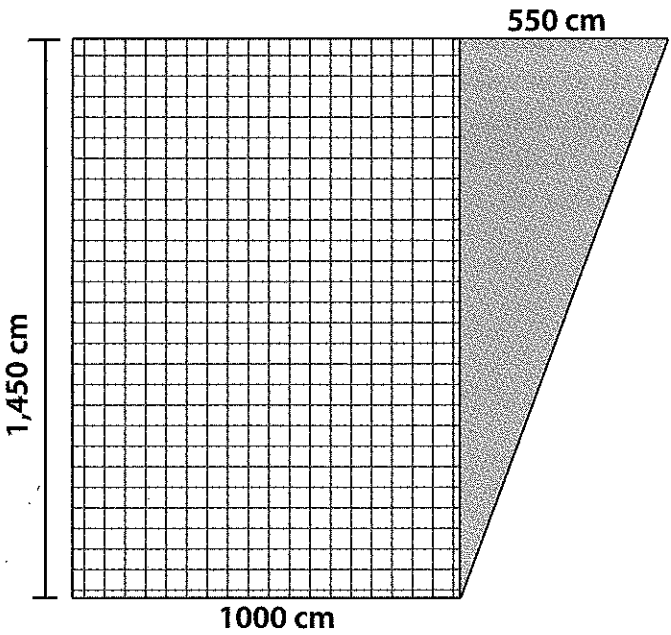
1. Area of the shaded surface:



2. Area of the entire surface:



3. Area of the entire surface:



4. Area of the shaded surface:

5. Area of the entire surface:

Name \_\_\_\_\_

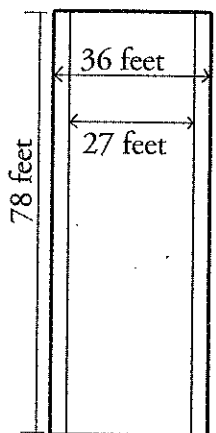
Use with page 93.

# PLACES AND SPACES

The settings where Olympic athletes compete include polygonal places and spaces of all sizes and shapes. Many are quadrilaterals.

**Solve these problems about the areas of these spaces.**

1. An Olympic speed skating rink has a width of 30 meters and a length of 60 meters. (This is the rectangular size.) If a rink has a diagonal line from opposite corners dividing the rink, what will be the area of each resulting triangle shape?
2. The platform for wrestling can be an 8- by 6-foot rectangle. If the platform's design has a green equilateral triangle in the center with an 8-foot base and a 6-foot height, how much of the platform area will not be green?
3. A 30- by 20-meter water polo pool has a blue bottom surface with a white square shape painted in the middle. The blue portion covers an area of 456 square meters. What is the length of one side of the white square?
4. An Olympic tennis court is a rectangle that measures 78 feet by 36 feet when designed for doubles play. That width is reduced to 27 feet when a singles match is played. See the diagram to the right. If two equal rectangular areas are marked off along the long sides of the court for this change, what is the area of each of those rectangles?
5. Many Olympic wrestling mats are 40-foot squares. If a mat is divided into four equal triangles, with one triangular section red and the others blue, what is the area of the blue space?
6. A regulation Olympic table for table tennis measures 2.74 meters by 1.525 meters. The table is divided into four equal sections for play—with the help of a net halfway across and a painted line that extends down the middle of the length of the table. What is the area of each of those rectangular sections (rounded to the nearest hundredth)?
7. The lanes in Olympic-sized swimming pools can vary. Many pools measure 50 meters by 25 meters. If there are eight lanes of 2.5-meter width in such a pool, how much surface area of the pool is not used by lanes?



Name \_\_\_\_\_