WORKSHEET

29   MATH SKILLS

Finding Perimeter and Area

Suppose your class has been asked to build a garden for your school. In order to keep the garden clean and undisturbed, your class decides to build a fence around the outside of it. How much fencing material will you need? The answer to this question can be found with geometry. The distance around the outside of any figure is called the **perimeter** *(P)*. In the case of the garden, the perimeter will equal the total length of the fence.
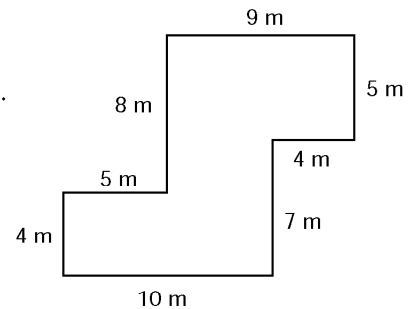
Part 1: Calculating Perimeter

PROCEDURE: To find the perimeter of a figure, add the lengths of all the sides.

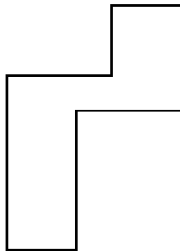**SAMPLE PROBLEM:** Find the perimeter *(P)* of the figure.
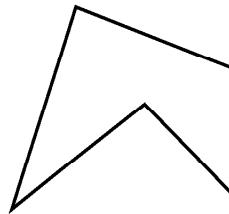
$$9 + 5 + 4 + 7 + 10 + 4 + 5 + 8 = 52$$

$$P = \textbf{52 m}$$

9 m
8 m
5 m
4 m
5 m
7 m
4 m
10 m

1. Using a metric ruler, measure the sides of the figures below in centimeters, and calculate the perimeter of each figure.
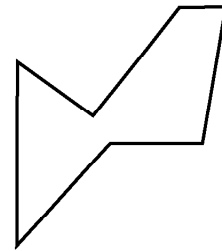
   a.

   b.

   c.

   $P =$ _____ $P =$ _____ $P =$ _____

2. Use the lengths to determine the perimeter of the figures.

   a. Rectangle: length = 4m
          width = 2m

   b. Square: side = 45 mm

   $P =$ _____ $P =$ _____

   c. Equilateral triangle: side = 6 m

   d. Rectangle: length = 3.5 cm
          width = 2.4 cm

 $P =$ _____ $P =$ _____

▲ MATH SKILLS

Finding Perimeter and Area, continued

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Part 2: Calculating Area

Now that you know how to find the perimeter of the garden, you are ready to plan what to grow. How much planting soil will you need? How many plants will fit in the garden? To answer these questions, you will need to know the area of the garden. **Area** (A) is the number of square units needed to cover the surface of a figure. The equations below will help you find the area of some common figures.

EQUATIONS: Area of a square = side $\times$ side

Area of a rectangle = length $\times$ width

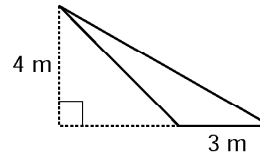Area of a triangle = $\frac{1}{2} \times$ base $\times$ height

SAMPLE PROBLEMS: Find the area (A) of each of the following figures:

Square 5 m	9 cm — 3 cm	4 m / 3 m
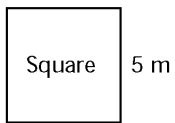
$A = $ side $\times$ side

$A = 5$ m $\times 5$ m

$A = $ **25 m²**
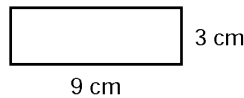
$A = $ length $\times$ width

$A = 9$ cm $\times 3$ cm

$A = $ **27 cm²**

$A = \frac{1}{2} \times$ base $\times$ height

$A = \frac{1}{2} \times 3$ m $\times 4$ m
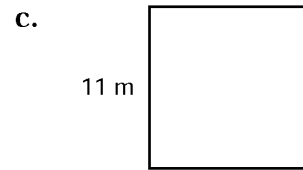
$A = $ **6 m²**

Area Alert!

3. Find the area of each figure below. *Hint:* When finding the area of irregular figures, first divide the figures up into triangles, squares, and rectangles and then add their individual areas.
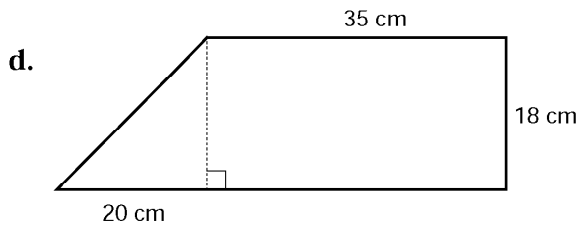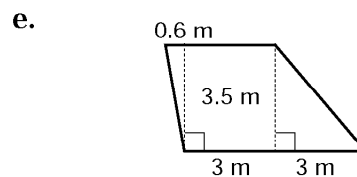
a.

7 m   8 m

$A = $ _____

b.

12 cm   3 cm

$A = $ _____

c.

11 m

$A = $ _____

d.

35 cm   18 cm   20 cm

$A = $ _____

e.

0.6 m   3.5 m   3 m   3 m

$A = $ _____