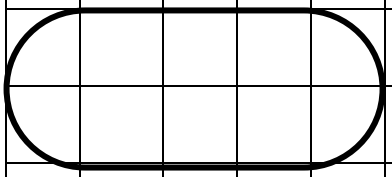
Diagnostic Activity:

Outline the shapes that go together to make each composite figure below:

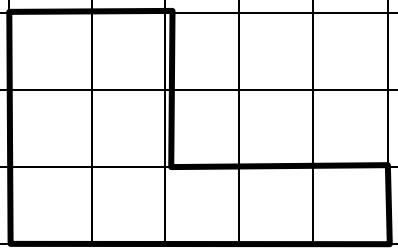
a



_____ and _____

_____ _____

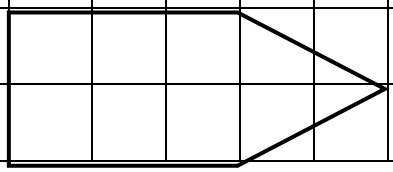
b



_____ and _____

_____ _____

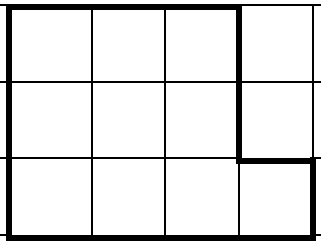
c



_____ and _____

_____ _____

d



_____ and _____

_____ _____

Composite Figures

Suggested Time: 60 minutes

What's important in this lesson:

In this lesson, you will learn how to solve problems involving the perimeter of composite figures made up of rectangles and half- and quarter-circles; solve problems that involve a combination of perimeter, area, and/or money

Complete these steps:

1. Read through the lesson portion of the package on your own.
2. Complete the exercises.
3. Check your answers with the Answer Key that your teacher has.
4. Seek assistance from the teacher as needed.
5. Complete the Evaluation and hand it in. Be sure to ask for help if you need it.
6. Complete the Reflective Activity.

Hand in the following:

1. Diagnostic Activity
2. Practice Problems
3. Composite Figures Evaluation
4. Reflective Activity

A Conversation with the Teacher:

1. Complete the Reflective Activity.
2. Discuss your answers with the teacher.

Questions for the teacher:

Composite Figures

Composite Figures

A **composite figure** is two or more common shapes combined to make one figure

Remember:

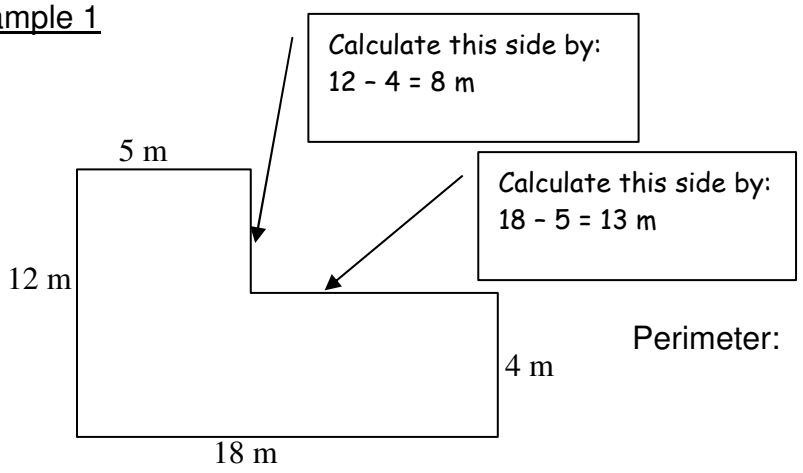
Perimeter is the distance around an object

Area is the number of square units required to cover a surface.

Part A: Perimeter

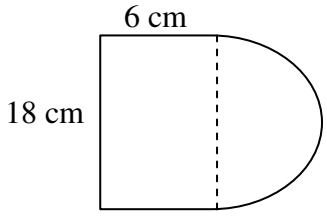
To find the perimeter of a composite figure, add all the outer sides of the figure.

Example 1



Perimeter: P = sum of all sides
P = 5 + 12 + 18 + 4 + 13 + 8
P = 60 m

Example 2



Circumference of the Half a Circle = 2π r ÷2
= 2 x π x 9 ÷ 2
= 28.3 cm

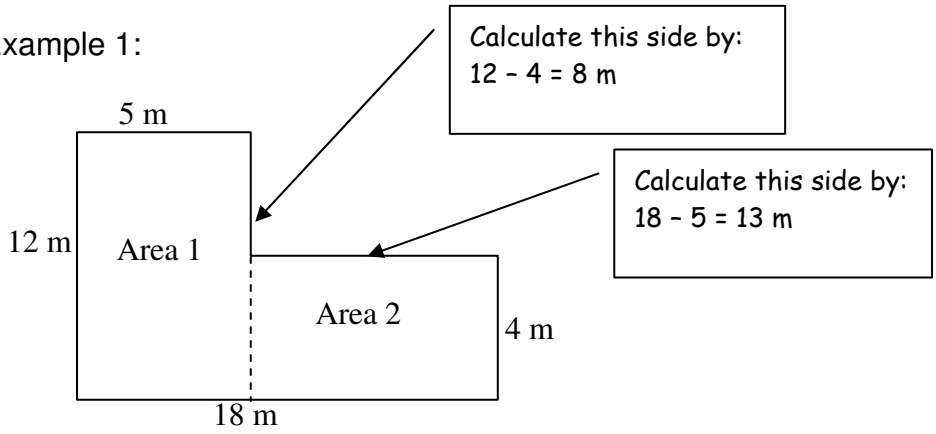
Perimeter = Half Circle + 3 sides
= 28.3 cm + 6 cm + 18 cm + 6 cm
= 58.3 cm

Part B: Area

To find the area:

- Divide the composite figure into its common shapes
- Calculate the area of each shape
- Add the areas

Example 1:

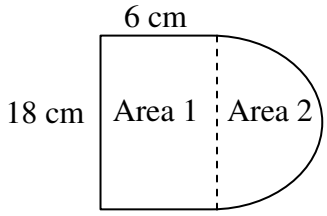


Area 1 = l x w
= 5 x 12
= 60 m^2

Area 2 = l x w
= 13 x 4
= 52 m^2

Total Area = Area 1 + Area 2
= 60 + 52
= 112 m^2

Example 2:



Area 1 = l x w
= 6 x 18
= 108 cm^2

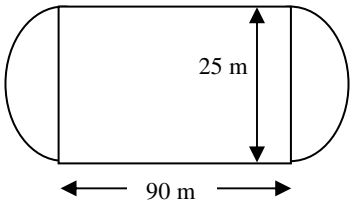
Area 2 = Half a Circle
= $\pi r^2 \div 2$
= $\pi \times 9^2 \div 2$
= 127.2 cm^2

Total Area = Area 1 + Area 2
= 108 cm^2 + 127.2 cm^2
= 137.2 cm^2

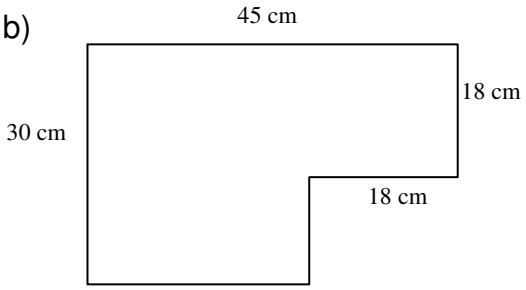
Practice

Determine the perimeter and area of each figure:

a)



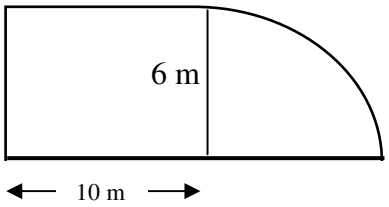
b)



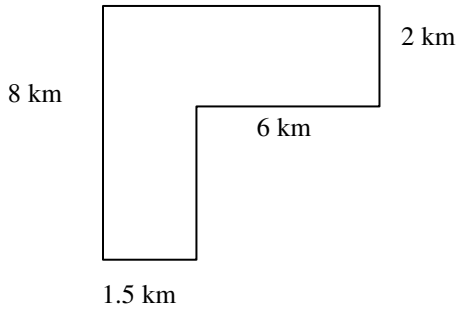
Composite Figures Evaluation

1. Determine the perimeter and area of the figures below: [16]

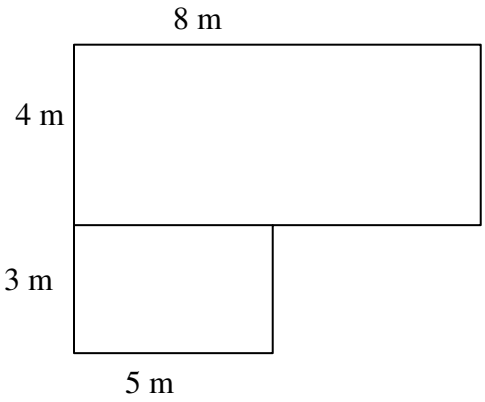
a)



b)



2. Below is the diagram of the Smith's back yard. Use the diagram to answer the following questions:



a) Determine the perimeter. [2]

b) If fencing costs $24.95/m, how much would it cost to enclose the entire yard? [2]

c) Determine the area of the yard. [4]

d) If the cost of grass seed is $1.45 for $1m^2$, how much will it cost to seed the yard? [2]