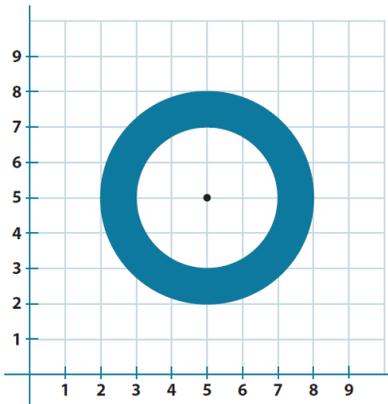


# Lesson 20: Composite Area Problems

## Classwork

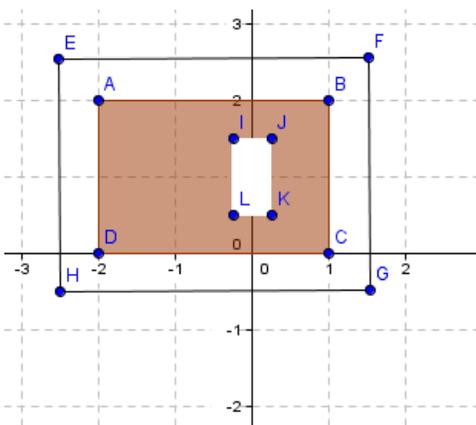
### Example 1

Find the composite area of the shaded region. Use 3.14 for  $\pi$ .



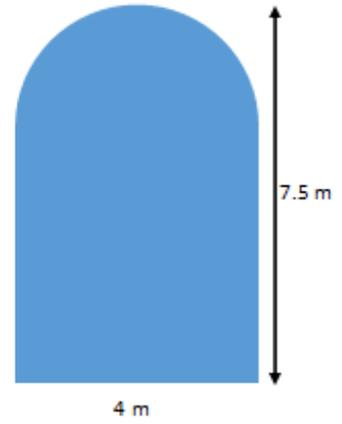
### Exercise 1

A yard is shown with the shaded section indicating grassy areas and the unshaded sections indicating paved areas. Find the area of the space covered with grass in units<sup>2</sup>.



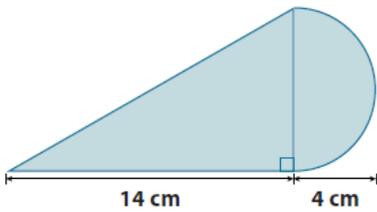
**Example 2**

Find the area of the figure that consists of a rectangle with a semicircle on top. Use 3.14 for  $\pi$ .



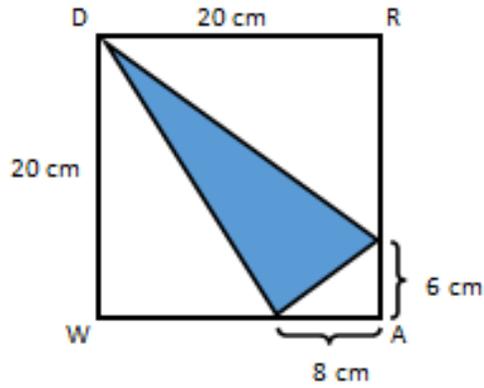
**Exercise 2**

Find the area of the shaded region. Use 3.14 for  $\pi$ .



**Example 3**

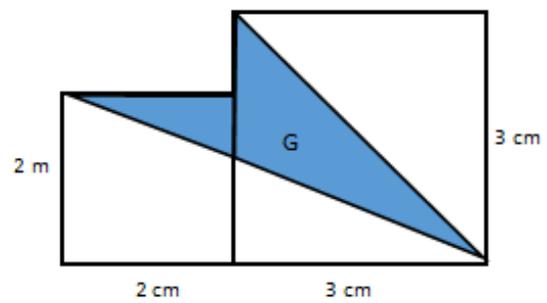
Find the area of the shaded region.



Redraw the figure separating the triangles; then, label the lengths discussing the calculations.

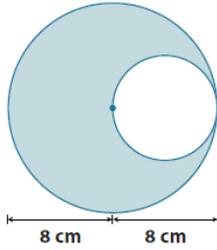
**Exercise 3**

Find the area of the shaded region. The figure is not drawn to scale.

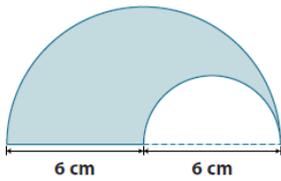


**Problem Set**

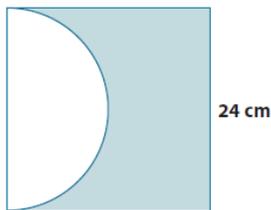
1. Find the area of the shaded region. Use 3.14 for  $\pi$ .



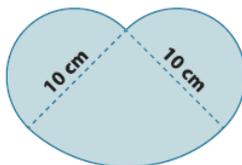
2. The figure shows two semicircles. Find the area of the shaded region. Use 3.14 for  $\pi$ .



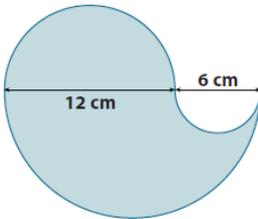
3. The figure shows a semicircle and a square. Find the area of the shaded region. Use 3.14 for  $\pi$ .



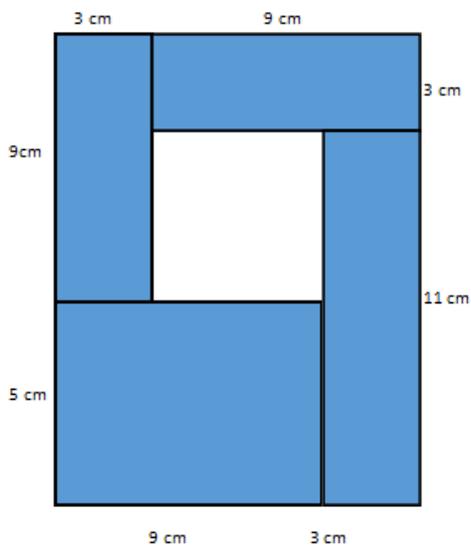
4. The figure shows two semicircles and a quarter of a circle. Find the area of the shaded region. Use 3.14 for  $\pi$ .



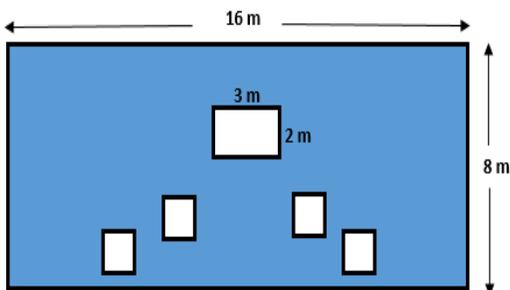
5. Jillian is making a paper flower motif for an art project. The flower she is making has four petals; each petal is formed by three semicircles as shown below. What is the area of the paper flower? Provide your answer in terms of  $\pi$ .



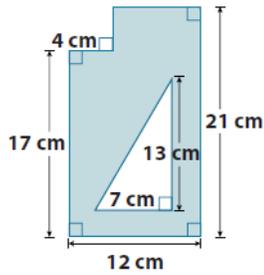
6. The figure is formed by five rectangles. Find the area of the unshaded rectangular region.



7. The smaller squares in the shaded region each have side lengths of 1.5 m. Find the area of the shaded region.

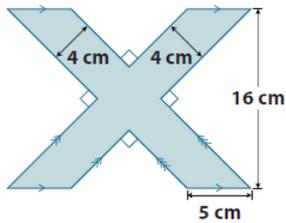


8. Find the area of the shaded region.

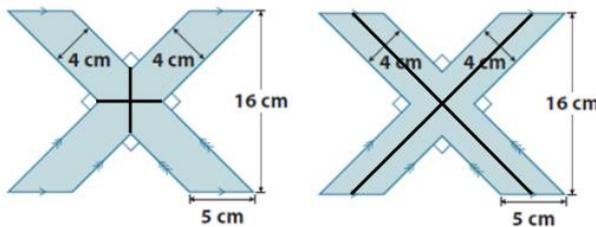


9.

a. Find the area of the shaded region.

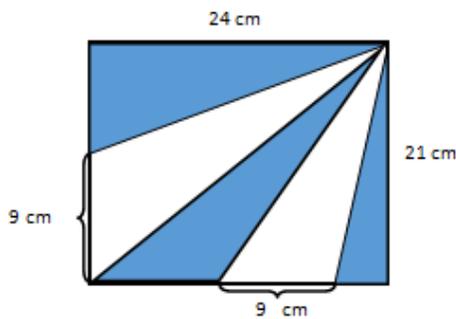


b. Draw two ways the figure above can be divided in four equal parts.



c. What is the area of one of the parts in (b)?

10. The figure is a rectangle made out of triangles. Find the area of the shaded region.



11. The figure consists of a right triangle and an eighth of a circle. Find the area of the shaded region. Use  $\frac{22}{7}$  for  $\pi$ .

