

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

CIRCLES & AREA

PERIOD: \_\_\_\_\_

## How Do You Find Area of Composite Shapes?

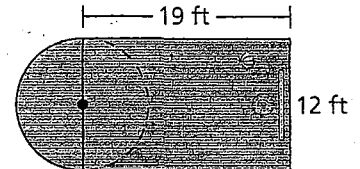
(Topic #7)

A **composite figure** is made up of triangles, squares, rectangles, semicircles, and other two-dimensional figures.

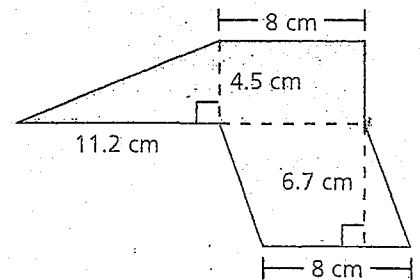
To find the area of a composite figure, separate it into figures with areas you know how to find. Then find the sum of the areas of those figures.

### EXAMPLE 1: Finding Area of a Composite Figure

- a) Find the area of the portion of the basketball court shown.

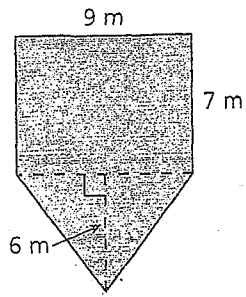


- b) Find the area of the figure.

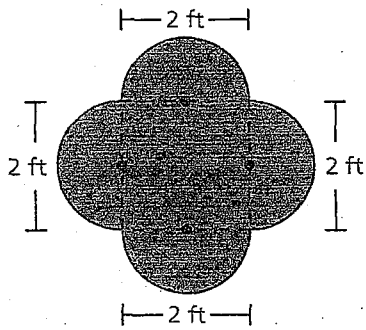


**PRACTICE:** Find the area of the figure. *Show all work.*

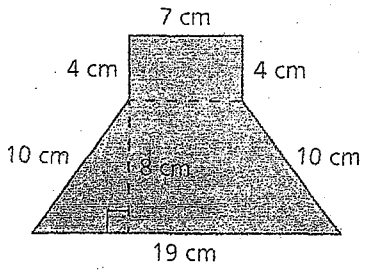
1.



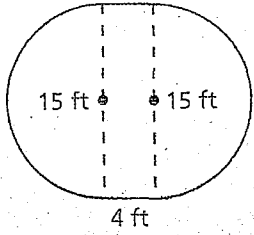
2.



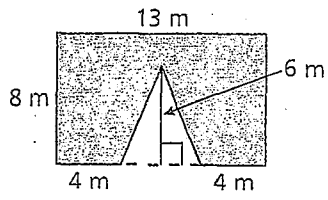
3.



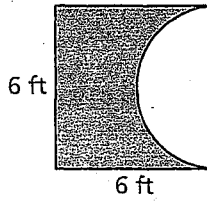
4.



5.



6.



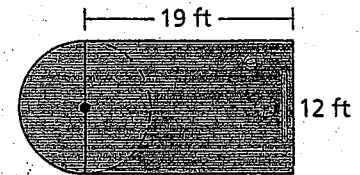
## How Do You Find Area of Composite Shapes? (Topic #7)

A **composite figure** is made up of triangles, squares, rectangles, semicircles, and other two-dimensional figures.

To find the area of a composite figure, separate it into figures with areas you know how to find. Then find the sum of the areas of those figures.

**EXAMPLE 1: Finding Area of a Composite Figure**

- a) Find the area of the portion of the basketball court shown.



Area of Rectangle

$$A = LW$$

$$A = 19(12)$$

$$A = 228$$

Area of Semicircle

$$A = \frac{1}{2} \pi r^2$$

$$A = \frac{1}{2} \pi (6)^2$$

$$A = 56.55$$

$$\begin{aligned} \text{Total} &= 228 + 56.55 \\ &= 284.55 \text{ ft}^2 \end{aligned}$$

- b) Find the area of the figure.

Area of Triangle      Area of Rectangle

$$A = \frac{1}{2} bh$$

$$A = \frac{1}{2} (4.5)(11.2)$$

$$A = 25.2$$

$$A = lw$$

$$A = 8(4.5)$$

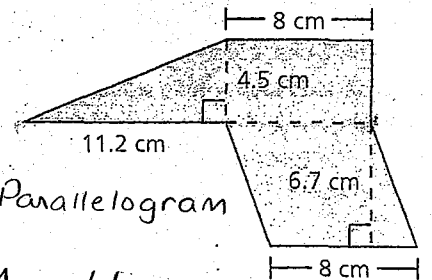
$$A = 36$$

Area of Parallelogram

$$A = bh$$

$$A = 8(6.7)$$

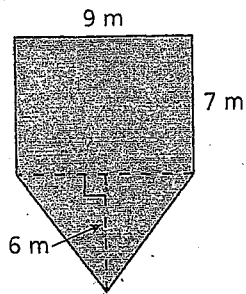
$$A = 53.6$$



$$\begin{aligned} \text{Total} &= 25.2 + 36 + 53.6 \\ &= 114.8 \text{ cm}^2 \end{aligned}$$

**PRACTICE: Find the area of the figure. Show all work.**

1.



Area of Rectangle

$$A = lw$$

$$A = 9(7)$$

$$A = 63$$

Area of Triangle

$$A = \frac{1}{2}bh$$

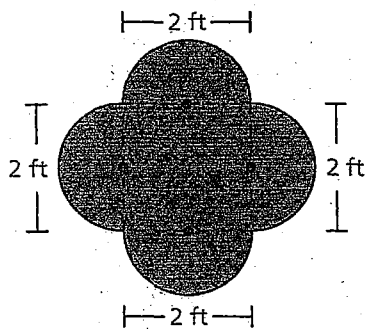
$$A = \frac{1}{2}(9)(6)$$

$$A = 27$$

$$\text{Total} = 63 + 27$$

$$= 90 \text{ m}^2$$

2.



Area of Square

$$A = s^2$$

$$A = 2^2$$

$$A = 4$$

Area of Circle (2)

$$A = 2\pi r^2$$

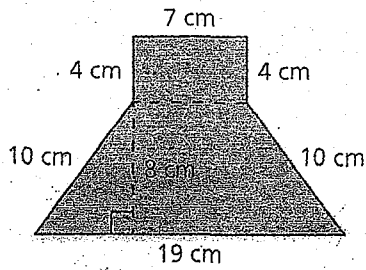
$$A = 2\pi (1)^2$$

$$A = 6.28$$

$$\text{Total} = 4 + 6.28$$

$$= 10.28 \text{ ft}^2$$

3.



Area of Rect

$$A = Lw$$

$$A = 7(4)$$

$$A = 28$$

Area of Trapezoid

$$A = \frac{1}{2} (b_1 + b_2) h$$

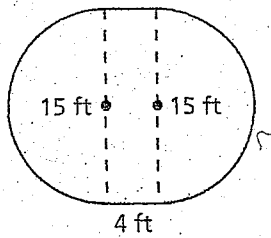
$$A = \frac{1}{2} (7 + 19) (8)$$

$$A = 104$$

$$\text{Total} = 28 + 104$$

$$= 132 \text{ cm}^2$$

4.



$$d = 15$$

$$r = 7.5$$

Area of Rectangle

$$A = Lw$$

$$A = 15(4)$$

$$A = 60$$

Area of Circle

$$A = \pi r^2$$

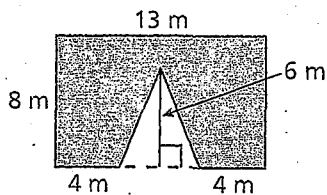
$$A = \pi (7.5)^2$$

$$A = 176.71$$

$$\text{Total} = 60 + 176.71$$

$$= 236.71 \text{ ft}^2$$

5.



Area of Rectangle

$$A = lw$$

$$A = 13(8)$$

$$A = 104$$

Area of Triangle

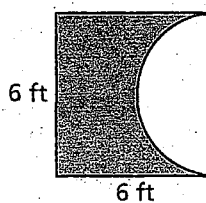
$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(5)(6)$$

$$A = 15$$

$$\begin{aligned} \text{Total} &= 104 - 15 \\ &= 89 \text{ m}^2 \end{aligned}$$

6.



Area of Square

$$A = s^2$$

$$A = 6^2$$

$$A = 36$$

Area of Semicircle

$$A = \frac{1}{2} \pi r^2$$

$$A = \frac{1}{2} \pi (3^2)$$

$$A = 14.14$$

$$\text{Total} = 36 - 14.14$$

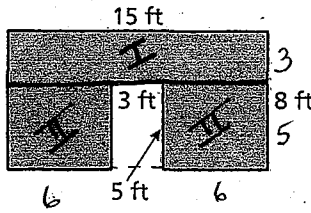
$$= 21.86 \text{ ft}^2$$



### HOMEWORK - (Topic #7)

#### Finding the Area of a Composite Figure

Find the area of the figure.

1. 

$I = 45$   
 $30$   
 $+ 30$   


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 $105$

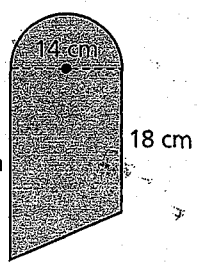
Area of Rectangle      Area of Rect

$A = LW$                        $A = LW$

$A = 15(8)$                        $A = 5(3)$

$A = 120$                            $A = 15$

Total =  $120 - 15$   
 $= 105 \text{ ft}^2$

2. 

Area of Trapezoid      Area of Semi  $\odot$

$A = \frac{1}{2}(b_1 + b_2)h$                $A = \frac{1}{2}\pi r^2$

$A = \frac{1}{2}(18 + 24)(14)$                $A = \frac{1}{2}\pi(7)^2$

$A = 294$                                $A = 76.97$

Total =  $294 + 76.97$   
 $= 370.97 \text{ cm}^2$

3. The diagram shows the shape of the green of a miniature golf hole. What is the area of the green?

$I$                                        $II$

Area of Parallelogram      Area of Trap.

$A = bh$                                $A = \frac{1}{2}(b_1 + b_2)h$

$A = 15(4)$                                $A = \frac{1}{2}(8 + 12)(4)$

$A = 60$                                    $A = 40$

Total =  $60 + 40$   
 $= 100 \text{ ft}^2$

