6

Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION
Misamis Street, Bago-Bantay, Quezon City

UNIFIED SUPPLEMENTARY LEARNING MATERIALS
(USLeM)

MATHEMATICS

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UNIFIED SUPPLEMENTARY LEARNING MATERIALS
Grades 6 MATHEMATICS

LESSON 1: Finding the Area of Composite Figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle.

EXPECTATION:

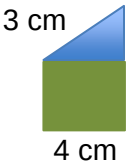
At the end of the lesson, you are expected to find the Area of Composite Figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle.

PRETEST

Directions: Read the questions carefully and write the letter of your answer on a separate sheet of paper.

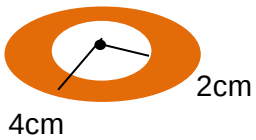
1.Find the area of the figure at the right which consists of one triangle and one square. The base of the triangle which is 4 cm has the same length with the side of the square. The height of the triangle is 3 cm.

A. 30 cm²
C. 22 cm²
B. 24 cm²
D. 20 cm²



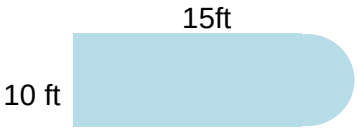
2.Find the area of the shaded region of the circle with the radii of 2 cm. and 4 cm, respectively. (Let $\pi = 3.14$)

A. 12.57 cm²
C. 50.27 cm²
B. 37.68 cm²
D. 64.84 cm²



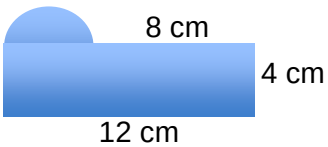
3. At the back of the resort there is a swimming pool for adult. A new semi-circular pool for children will be connected to the swimming pool of the adults. Find the area of the swimming pool. (Let $\pi = 3.14$)

A. 189.25 ft²
C. 110.75 ft²
B. 150.00 ft²
D. 15.13 ft²



4. Find the area of the figure that is made of one semi-circle and one rectangle as shown at the right.

A. 12.56 cm²
C. 54.28 cm²
B. 48.12 cm²
D. 73.12 cm²



5. The figure is made of square and 2 semi-circles with the side length of 8 cm. Find the area of the shaded region.

A. 164.48 cm²
C. 25.12 cm²
B. 64 cm²
D. 13.76 cm²

UNIFIED SUPPLEMENTARY LEARNING MATERIALS
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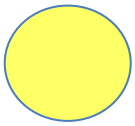
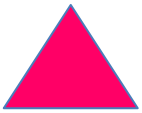
LOOKING BACK TO YOUR LESSON

What is my formula? Write the letter of the correct answer in the blank.

_____1. 

_____2. 

_____3. 

_____4. 

_____5. 

A. $A = \frac{\text{base x height}}{2}$

B. A = length x width

C. A = s x s

D. $A = \pi r^2$

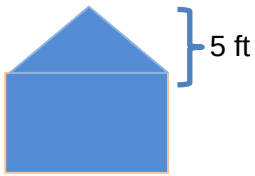
E. $A = \frac{\pi r^2}{2}$

BRIEF INTRODUCTION

A composite figure is a combination of two or more figures.

To find the area of composite figure, get first the area of each figure then add.

Example 1 The figure is made of one triangle and one square like shown below. What is the area of the composite figure?



1. Area of square = s x s
   = 7 x 7
   A = 49 ft ²

2.Area of triangle= $\frac{\text{base x height}}{2}$

A = 7ft x 5 ft

A = $\frac{35\ ft^2}{2}$

A = 17.5 ft²

Lastly, add the area of square and triangle.

A= 49 ft² + 17.5 ft =66.5 ft².

The answer is 66.5 ft².

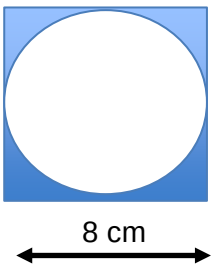
Example 2: The figure is made of a rectangle and a semi-circle as shown below. What is the area of the composite figure?

1.Find the area of rectangle.
A= length x width
A= 6 cm x 8 cm
A= 48 cm²

2. Find the area of semi-circle. The diameter is 6cm but get the radius which is 3.
$A=\frac{}{2}=\frac{3.14 \times 3^2}{2}=\frac{3.14 \times 9}{2}$
A=28.26 ÷2= 14.13 cm ²

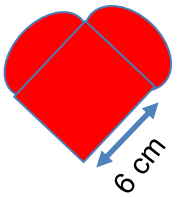
3.Lastly, add the area of rectangle and semi-circle.
A= 48 cm +14.13cm²
A=62.13 cm²

Example 3: The figure is made of a square and circle as shown below. What is the area of the shaded region



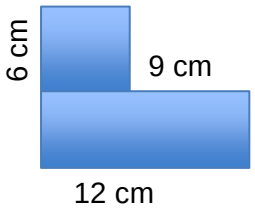
Area of Square	Area of Circle	Subtract the 2 areas
A= s x s A= 8 x 8 A= 64 cm² r=d/2	$A=\pi r^2$ A = 3.14(4 x 4) A = 3.14 (16) A = 50.24 cm²	A = 64cm² - 50.24cm² A = 13.76 cm² The area of the shaded region is 13.76 cm²

Example 4: The figure is made of 2 semi circles and square. Find the area of the composite figure.



Area of Square	Area of Semi-Circle	Add the 3 areas
A= s x s A= 6x 6 A= 36 cm² r=d/2 r=6/2 r= 3 cm	$A=\frac{\pi r^2}{2}$ A = 3.14(3 x 3) ÷2 A = 3.14 (9) ÷2 A = 14.13 cm²	A= 36cm²+14.13cm²+14.13 A = 36cm²+28.26cm² The area of the shaded region is 64.26 cm².

Example 4 : The figure is made of rectangle and square as shown below. Find the area od the composite figure.

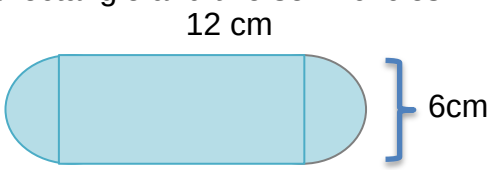


Area of Square	Area of rectangle	Add the area
A= s x s A= 3 x 3 A= 9 cm²	A = length x width A= 12 x 3 A= 36 cm ²	A = 9 cm²+36cm² A = 45cm² The area of the composite figure is 45cm²

ACTIVITY NO 1

Directions: Do the following activity. Write the answer in the boxes.

1. The doormat is like the figure below. It has a rectangle and two semi-circles. Find the area of the doormat.

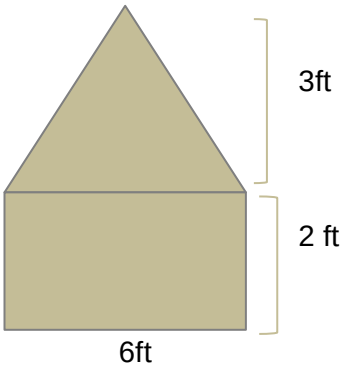


   a. Area of the rectangle
      A =

   b. Area of 2 circles
      A=

   c. Area of the doormat
      A =

2. Mar wants to paint the back side of the dog's house like in the figure below. Find the area of the dog's house to be painted.



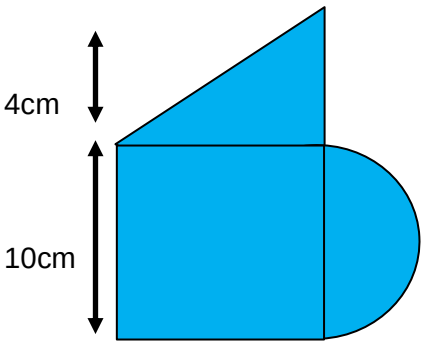
   a. Area of triangle
      A =

   b. Area of rectangle
      A =

   c. Area of the dog's house
      A =

3. Find the area of a composite figure with square, triangle and semi-circle.

   a. Area of semi-circle
      A =

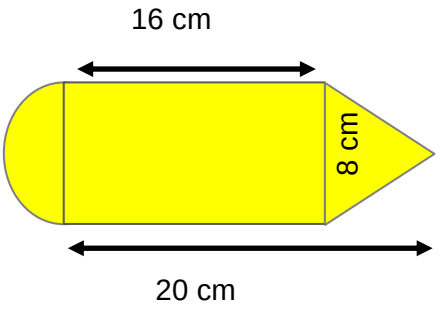


   b. Area of triangle
      A =

   c. Area of square
      A=

   d. Area of composite figure
      A=

4. Mrs. Graham makes a pencil-like décor in her room. It is made of a semicircle, a rectangle, and a triangle with dimensions shown in the figure. Find the area.



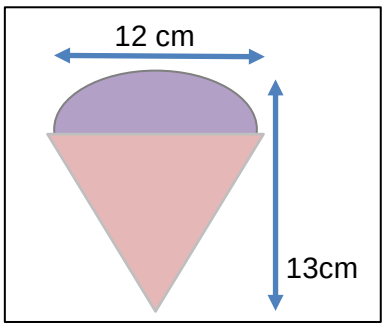
   a. Area of semi-circle
      A =

   b. Area of rectangle
      A =

   c. Area of triangle
      A =

   d. Area of composite figure
      A =

5. Aprille combines the figure of a semi-circle and triangle as shown below. What is the area of the composite figure?



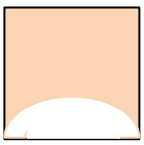
   a. Area of semi-circle
      A =

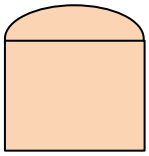
   b. Area of triangle
      A =

   c. Area of composite figure
      A =

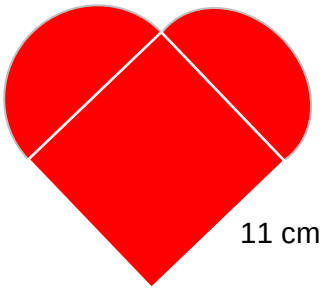
ACTIVITY NO 2

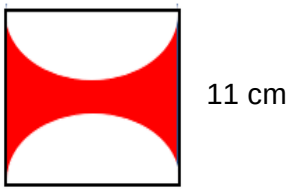
Directions: Find the area of the shaded region then compare using >, < or = to make the equation true.



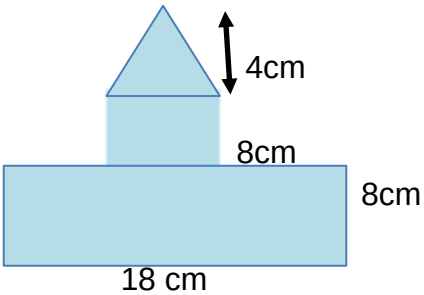


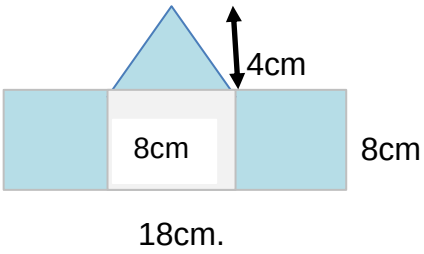
1. A=_____ _____ A = _____



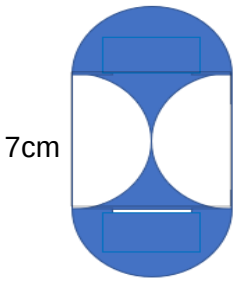


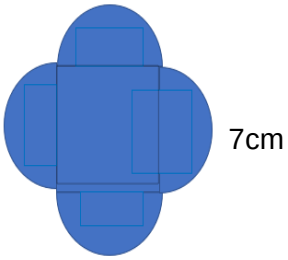
2. A=_____ _____ A = _____



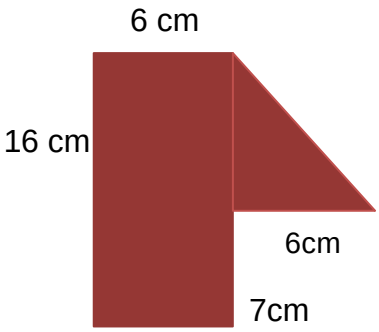


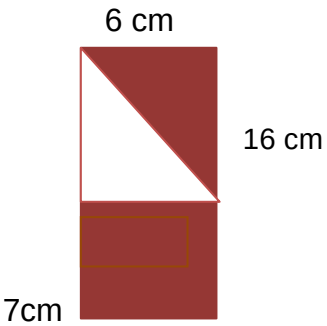
3. A=_____ _____ A = _____





4. A=_____ _____ A = _____





5. A=_____ _____ A = _____

ACTIVITY NO 3

Directions: Read carefully and do the following:

1. Draw a composite figure made of 3 triangles and a rectangle. Label its dimension and find the area of the composite figure.

2. Give an example of a composite figure that has an area between 90 to 100 square units.

CHECKING YOUR UNDERSTANDING

Directions: Read and solve.

1. A figure is made up of a square with a side length of 6 cm connected to a semi-circle with the same diameter as the length of the square. What is the area of the composite figure?

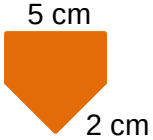
2. A figure is made up of square with a side length of 8 cm and a circle inside it with the same diameter as the length of the square. Find the area of the composite figure.

POST TEST

Directions: Read and analyze the questions. Write the letter of the correct answer.

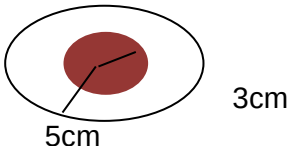
1.Find the area of the figure below which consists of one triangle and one square. The square and the triangle have the same base length of 5 cm and the height of the triangle is 2 cm.

A. 30 cm²
B. 25 cm²
C. 20 cm²
D. 10 cm²



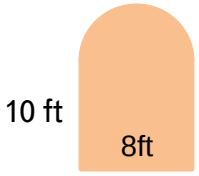
2. Find the area of the unshaded region of the circle with radii of 3 cm and 5 cm, respectively.

A. 12.56 cm²
B. 28.56 cm²
C. 50.24cm²
D. 78.50 cm²



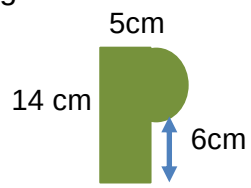
3. The window in the church with a semi-circle and a rectangle is to be painted. Find the area to be painted as shown at the right.

A. 80.00 ft²
B. 54.88 ft²
C. 54.88 ft²
D. 29.76 ft²



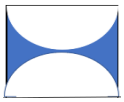
4. The figure is like a letter P with 1 semi-circle and one rectangle as shown below. Find the area of the figure.

A. 95.12 cm²
B. 70.00 cm²
C. 44.88 cm²
D. 25.12 cm²



5. The figure is made up of square and 2 semi-circles with the side length of 9 cm. Find the area of the shaded region.

A. 17.42 cm²
B. 31.79 cm²
C. 63.58 cm²
D. 81.00 cm²



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https://www.goldenrams.com/cms/lib/PA01000390/Centricity/Domain/247/9-3%20AB.pdf

https://www.math-only-math.com/area-of-combined-figures.html

https://www.ck12.org/boook

ANSWER KEY:

CHECKING YOUR UNDERSTANDING

1.A=50.13 cm^2

2. A=13.76 cm^2

ASSESSMENT

PRETEST

1.C
2.B
3.A
4.C
5.D

POSTTEST

1.A
2.C
3.C
4.A
5.A

LOOKING BACK TO YOUR LESSON

1.B
2.D
3. C
4. A
5 E

ACTIVITY 1

1. a.72 cm^2 b. 28.28 cm^2 c.100.28 cm^2
2. a. 9cm^2 b.12cm^2 c. 21cm^2
3. a. 39.27 b.20 c.100 d.159.27
4. a.25.12 b.128 c.16 d.1169.12
5. a. 56.55 b.78 c.134.55

ACTIVITY 2

1. A=136.64cm^2 < 313.36 cm^2
2. A=216.04cm^2 >25.96cm^2
3. A=224 cm^2 > 96 cm^2
4. A=49 cm^2 < 125.96 cm^2
5. A=123 cm^2>69 cm^2

ACTIVITY 3

Answer may vary.