Pre-Algebra

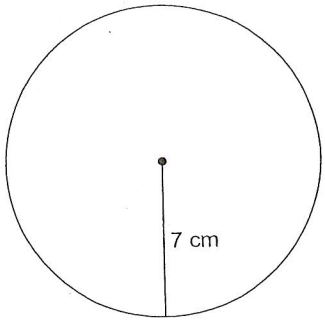
Name_____

Date_____ Period____

# Assignment

**ind the circumference of each circle. Round to the nearest tenth.**

1)

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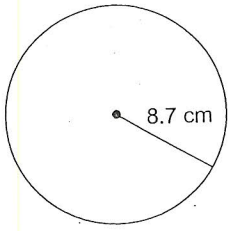


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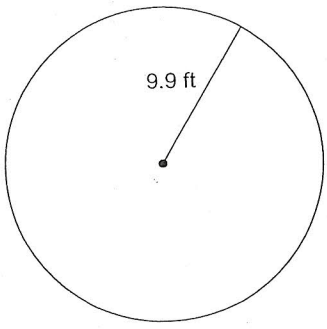


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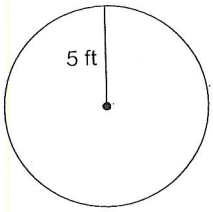


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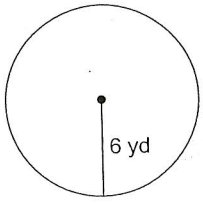



6) radius = 9 in

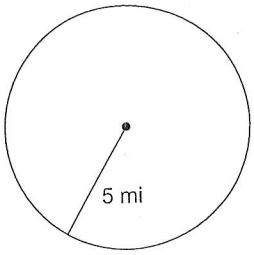
7) radius = 3 km

8) radius = 9.5 mi

9) radius = 2.8 km

10) radius = 6 m

11)

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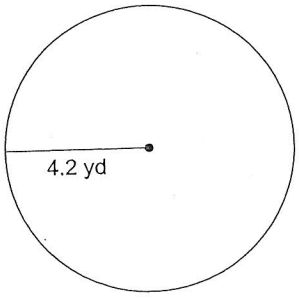


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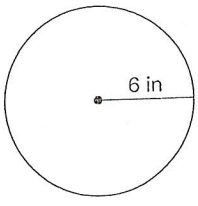


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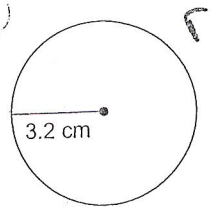
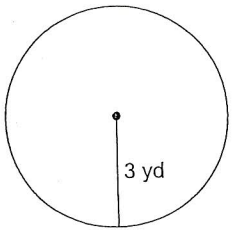



r=3.2

15)




**Find the area of each. Round to the nearest tenth.**

16) radius = 6 km

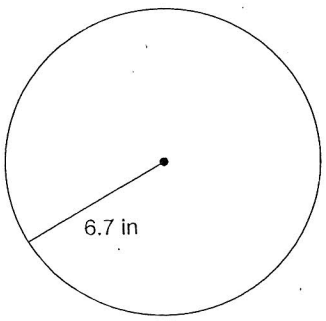
17) radius = 5 in

18) radius = 5.9 cm

19) radius = 9 km

20) radius = 7 cm

21)

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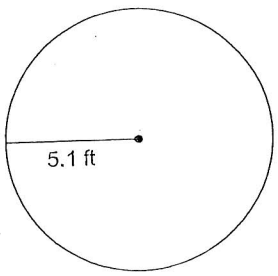


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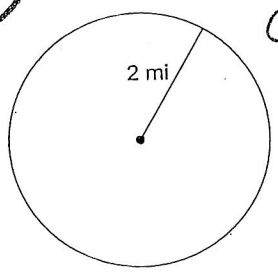


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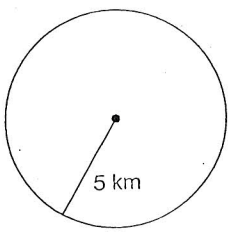


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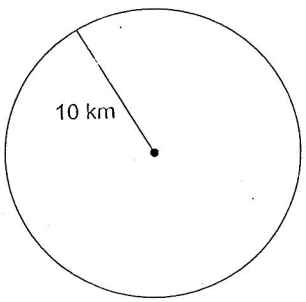



26) diameter = 19.6 ft

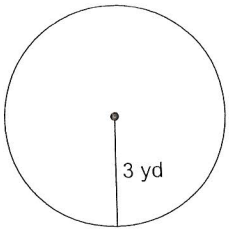
27) diameter = 10 yd

28) diameter = 5.2 ft

29) diameter = 14.4 cm

30) diameter = 18 ft

15)




**Find the area of each. Round to the nearest tenth.**

16) radius = 6 km

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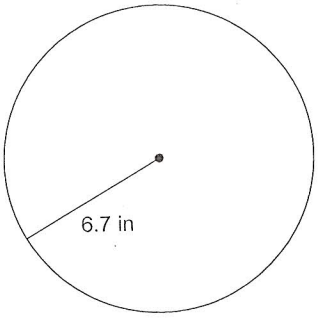
18) radius = 5.9 cm

19) radius = 9 km

20) radius = 7 cm

21)

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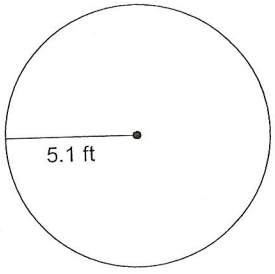


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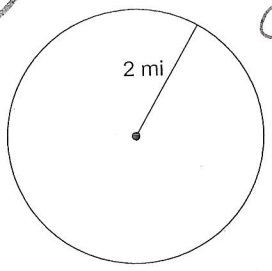


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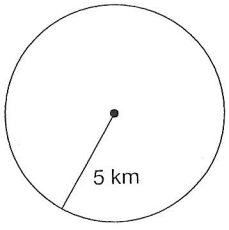


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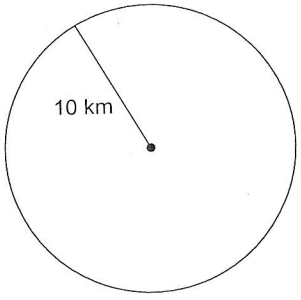



26) diameter = 19.6 ft

27) diameter = 10 yd

28) diameter = 5.2 ft

29) diameter = 14.4 cm

30) diameter = 18 ft

Beside each item write A for area or P for perimeter.

Pouring water in a fish tank._____

A table cloth placed on a table._____

A border around a bullentin board._____

Walking around the room._____

The middle of a bullentin board._____

A gallon of milk on a table._____

Walking around a football field._____

Painting a room._____

Planting a flower garden._____

Covering a car to protect it from the weather._____

Adding up all sides to a rectangle._____

Papers on a desk._____

Painting just around the border of a room._____

The lines around a baseball field._____



# Circumference Of A Circle Worksheet

Name:

| |
|---|
| If the radius of a circle is 2 inches, then its Circumference = inches. |
| If the diameter of a circle is 2.5 centimeters, then its Circumference = centimeters. |
| If the circumference of a circle is 314 decimeters, then its Diameter = decimeters. |
| If the circumference of a circle is 10 square feet, then its Diameter = square feet. |
| If the diameter of a circle is 9 centimeters, then its Circumference = centimeters. |
| If the radius of a circle is 15.70 feet, then its Circumference = feet. |
| If the radius of a circle is 3 centimeters, then its Circumference = centimeters. |

NAME _____ DATE _____ PERIOD ____

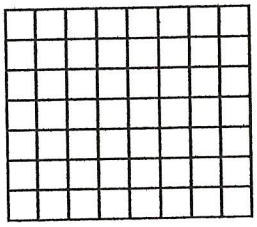
# 1-8 Study Guide and Intervention

## *Geometry: Area of Rectangles*

The **area** of a figure is the number of square units needed to cover a surface. You can use a formula to find the area of a rectangle. The formula for finding the area of a rectangle is $A = \ell \times w$. In this formula, $A$ represents area, $\ell$ represents the length of the rectangle, and $w$ represents the width of the rectangle.

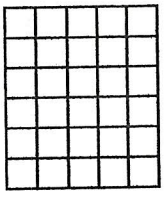
**EXAMPLE 1** **Find the area of a rectangle with length 8 feet and width 7 feet.**

$A = \ell \times w$ Area of a rectangle
$A = 8 \times 7$ Replace $\ell$ with 8 and $w$ with 7.
$A = 56$
The area is 56 square feet.



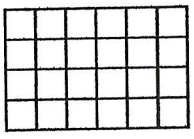
**EXAMPLE 2** **Find the area of a rectangle with width 5 inches and length 6 inches.**

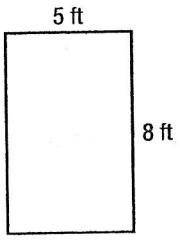
$A = \ell \times w$ Area of a rectangle
$A = 6 \times 5$ Replace $\ell$ with 6 and $w$ with 5.
$A = 30$
The area is 30 square inches.

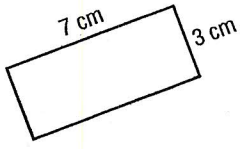


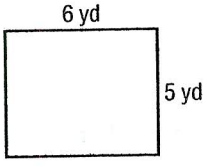
**EXERCISES**

**Find the area of each rectangle.**

1. 

2. 


3. 


4. 


5. What is the area of a rectangle with a length of 10 meters and a width of 7 meters?

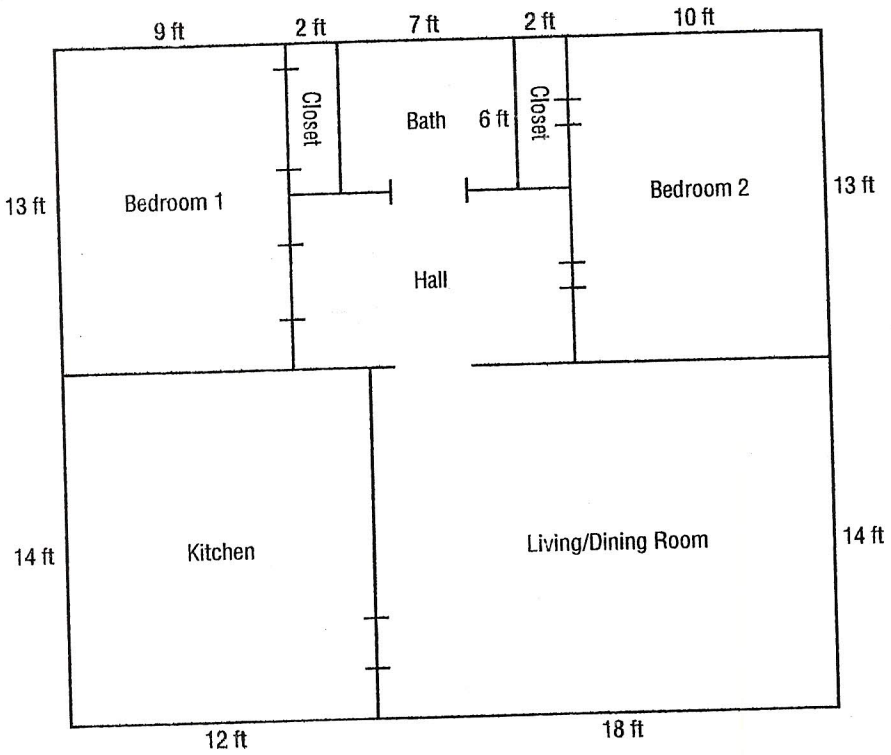
6. What is the area of a rectangle with a length of 35 inches and a width of 15 inches?

NAME _____ DATE _____ PERIOD ____

# 1-8 Practice: Word Problems

## *Geometry: Area of Rectangles*

**FLOOR PLANS For Exercises 1–6, use the diagram that shows the floor plan for a house.**

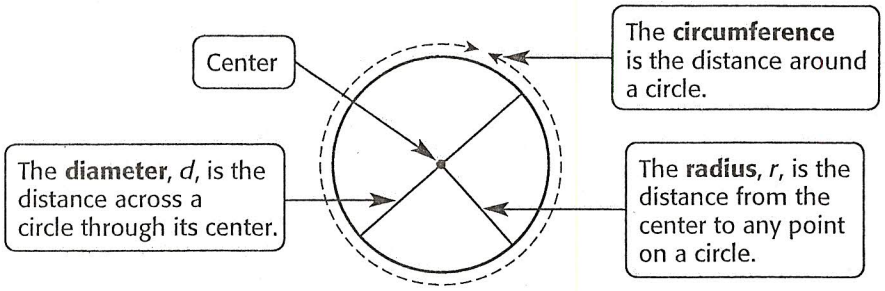



| | |
|---|---|
| **1.** What is the area of the floor in the kitchen? | **2.** Find the area of the living/dining room. |
| **3.** What is the area of the bathroom? | **4.** Find the area of Bedroom 1. |
| **5.** Which two parts of the house have the same area? | **6.** How much larger is Bedroom 2 than Bedroom 1? |

NAME _____ DATE _____ PERIOD _____

# 4-6 Study Guide and Intervention

## Circumference




The circumference of a circle is equal to $\pi$ times its diameter or $\pi$ times twice its radius. $C = \pi d$ or $C = 2\pi r$

**EXAMPLE 1** **Find the circumference of a circle whose diameter is 4.2 meters. Round to the nearest tenth.**

| | |
|---|---|
| $C = \pi d$ | Write the formula. |
| $\approx 3.14 \times 4.2$ | Replace $\pi$ with 3.14 and $d$ with 4.2. |
| $\approx 13.188$ | Multiply. |
| $\approx 13.2$ | Round to the nearest tenth. |

The circumference of the circle is about 13.2 meters.

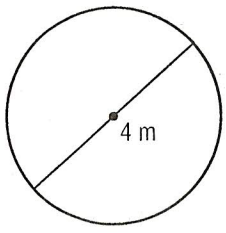
**EXAMPLE 2** **Find the circumference of a circle whose radius is 13 inches. Round to the nearest tenth.**

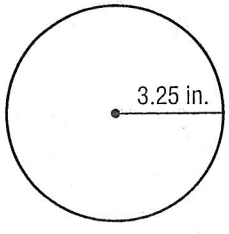
| | |
|---|---|
| $C = 2\pi r$ | Write the formula. |
| $\approx 2 \times 3.14 \times 13$ | Replace $\pi$ with 3.14 and $r$ with 13. |
| $\approx 81.64$ | Multiply. |
| $\approx 81.6$ | Round to the nearest tenth. |

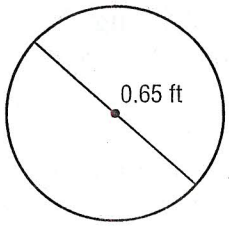
The circumference of the circle is about 81.6 inches.

**EXERCISES**

**Find the circumference of each circle shown or described. Round to the nearest tenth.**

1. 


2. 


3. 


4. The radius of a circle measures 16 miles. What is the measure of its circumference to the nearest tenth?

5. Find the circumference of a circle whose diameter is 12.5 yards to the nearest tenth.

6. What is the circumference of a circle with a radius of 2.05 inches to the nearest tenth?

NAME _____ DATE _____ PERIOD ____

# 4-6 Practice: Word Problems

## *Circumference*

**AUDIO MEDIA For Exercises 1–3, use the table that shows the sizes of three main audio media: vinyl, CD, and mini-disc. Use 3.14 for $\pi$.**

| Diameters of Audio Media | |
|---|---|
| **Medium** | **Diameter (inches)** |
| Vinyl Disc | 12 |
| Compact Disc (CD) | 5 |
| Mini Compact Disc (Mini-disc) | 2.5 |

**1.** What is the circumference of a CD?

**2.** When a record player needle is placed on the outside edge of a vinyl record, how far does the needle travel in one rotation?

**3.** What is the difference between the circumference of a vinyl disc and a mini-disc?

**4. CROP CIRCLES** On June 8, 1992 a crop circle with an 18-meter radius was found in a wheat field near Szekesfehervar, 43 miles southwest of Budapest. What was its circumference?

**5. SEQUOIAS** The largest living thing in the world is the General Sherman sequoia in Sequoia National Park, California. It is 272 feet high, has a diameter of 36.5 feet, and has an estimated weight of 2,150 tons. What is the sequoia's circumference to the nearest tenth of a foot?

**6. MONSTER TRUCKS** A monster truck fleet uses 23 degree tires 66 inches tall, 43 inches wide, mounted on 25-inch diameter wheels. What is the circumference of a monster truck wheel to the nearest tenth of an inch?

NAME _____ DATE _____ PERIOD ____

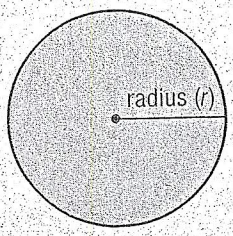
# 14-3 Study Guide and Intervention

## Area of Circles

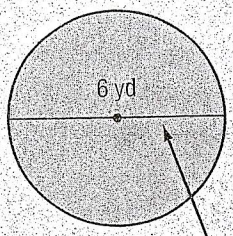
The area $A$ of a circle is the product of $\pi$ and the square of the radius $r$.

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

**Model**




**EXAMPLE 1** **Find the area of the circle to the nearest tenth.**




The diameter is 6 yards. So, the radius is 6 ÷ 2 or 3 yards.

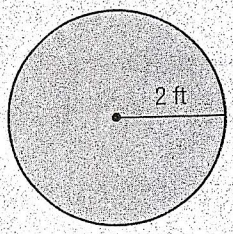
| | |
|---|---|
| $A = \pi r^2$ | Area of a circle |
| $A \approx 3.14 \times 3^2$ | Replace $\pi$ with 3.14 and $r$ with 3. |
| $A \approx 3.14 \times 9$ | Evaluate $3^2$. |
| $A \approx 28.26$ | Use a calculator. |

The area of the circle is about 28.3 square yards.

**EXERCISES**

**Find the area of each circle to the nearest tenth. Use 3.14 for $\pi$.**

1.

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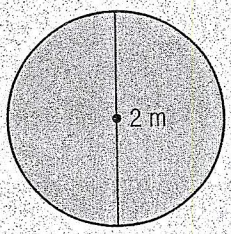


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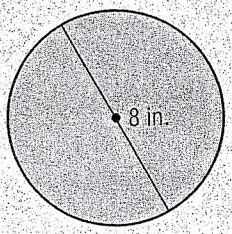


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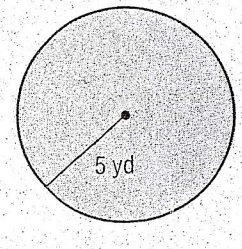
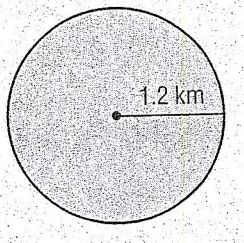
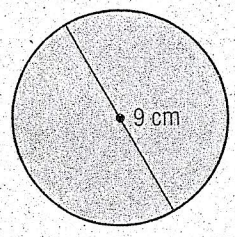



5.




6.



NAME _____ DATE _____ PERIOD ____

# 14-3 Practice: Word Problems

## *Area of Circles*

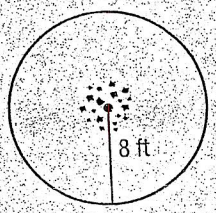
**For Exercises 1–4, find each area to the nearest tenth. Use 3.14 for π.**

1. **SWIMMING POOLS** Jensen's parents put him in charge of ordering a cover for their new swimming pool. The pool is in the shape of a circle and has a radius of 14 feet. What will the area of the cover need to be?

2. **BASKETBALL** Thompson School will paint the center circle of the basketball court with yellow paint, one of the school colors. The circle has a radius of 2 feet. What is the area that will be painted yellow?

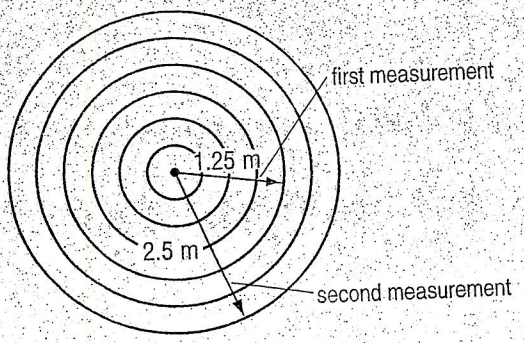
3. **BASEBALL** The pitcher's mound on a regulation baseball field has a diameter of 18 feet. What is the area of a pitcher's mound?

4. **CAMPING** A group of campers needs to clear away twigs and bark on the ground to make a fire circle for people to safely sit around the campfire. What is the area that they need to clear?




**For Exercises 5 and 6, find each area to the nearest tenth. Use 3.14 for π. Use the following information.**

**SCIENCE** Hal and Frank are conducting a science experiment. They drop a pebble into a pond and measure the radius of the circles of waves.




5. What was the area covered by waves the first time it was measured?

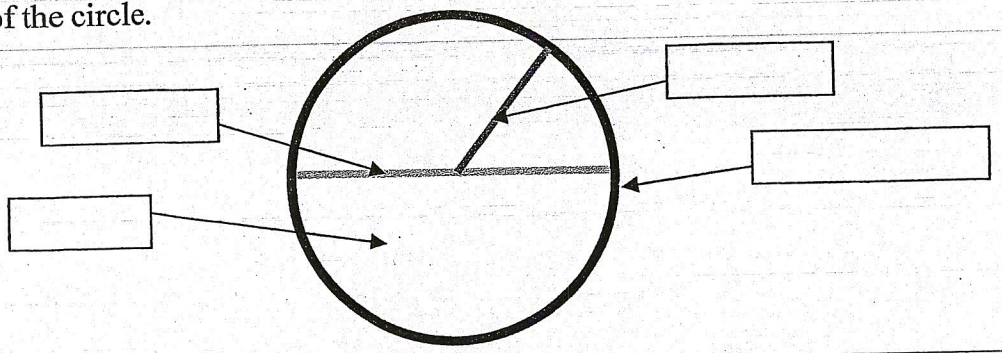
6. What was the area covered by waves the second time it was measured? Explain how you found your answer.

Name:_____ Date:_____

# 6.12 Area and Circumference of a Circle Tutorial Worksheet

**Directions: As you watch the tutorial video, fill in the blanks for questions 1-7.**

**1.** Label each part of the circle.



**2.** The radius is _____ the diameter. The diameter is _____ times the radius.

**3. Formula for Circumference of a Circle:**

_____

**4. Formula for Area of a Circle:**

_____

**5.** Fill in the blanks to solve: If the circumference of a circle is 62.8, what is the radius?

$C = \pi d$ $\quad 62.8 = (\_\_\_\_\_)(\_\_\_\_\_)$ $\quad \frac{62.8}{3.14} = d$ $\quad d = \_\_\_\_\_$

**6.** What is the radius? $\quad 2r = d$ _____

**7.** Fill in the blanks to solve: What is the radius of a circle whose area is 50.24?

$A = \pi r^2$ $\quad 50.24 = (\_\_\_\_\_)r^2$ $\quad \frac{50.24}{3.14} = r^2$ $\quad \_\_\_\_\_ = r^2$ $\quad 16 = r \times r$ $\quad r = \_\_\_\_\_$

**Once the tutorial is complete, try problems 1-10 on your own.**

**1.** The measurement inside a circle is the _____.

**2.** The measurement across a circle through the center is the _____.

**3.** The measurement around a circle is the _____.

**4.** The measurement from the center of a circle to the edge is the _____.

**5.** Find the circumference, if the radius is 3.

_____

**6.** Find the circumference, if the diameter is 8.

_____

**7.** Find the area, if the radius is 2.

_____

**8.** Find the area, if the diameter is 10.

_____

**9.** Find the radius, if the circumference is 25.12.

_____

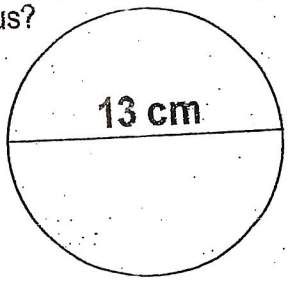
**10.** Find the radius, if the area is 28.26.

_____

# 6.12 Area and Circumference of a Circle

**Now you are ready to work out 10 practice questions. You may use your notes to answer the problems. Remember to show your work! Your answers will be turned in to your teacher.**

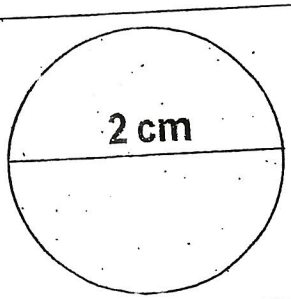
**1.** What is the radius?



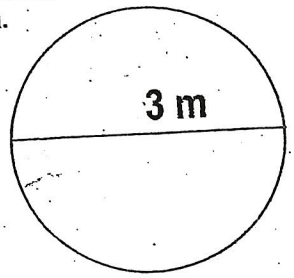

**2.** Find the area of a circle with the radius of 4 km.

$r = 4$ km

**3.** Find the area.



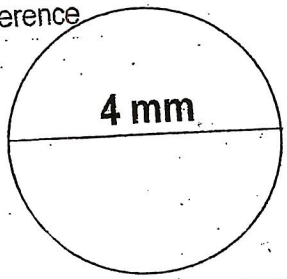

**4.** Find the area.



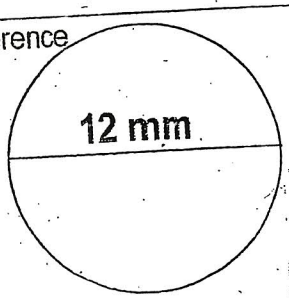

**5.** Find the area.

$d = 8$ cm

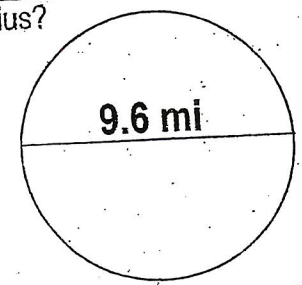
**6.** Find the circumference



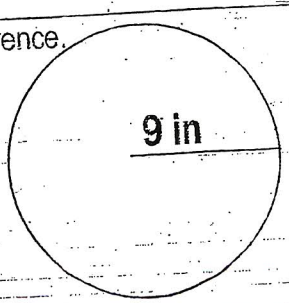

**7.** Find the circumference



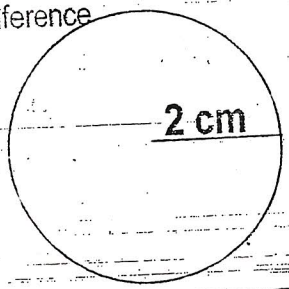

**8.** What is the radius?




**9.** Find the circumference.




**10.** Find the circumference



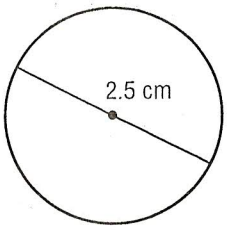
NAME _____ DATE _____ PERIOD _____

# 4-6 Practice: Skills

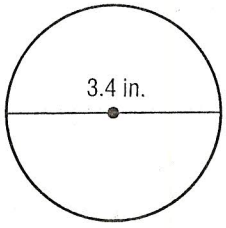
## *Circumference*

**Find the circumference of each circle shown or described. Use 3.14 for $\pi$. Round to the nearest tenth.**

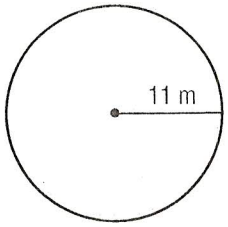
**1.**



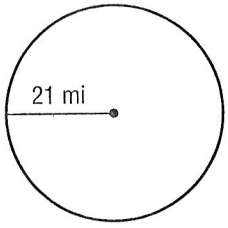

**2.**



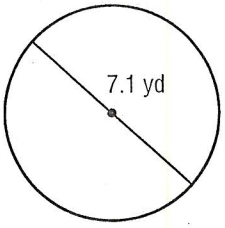

**3.**



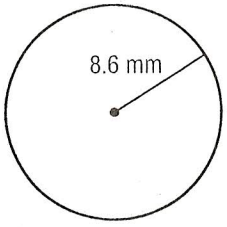

**4.**



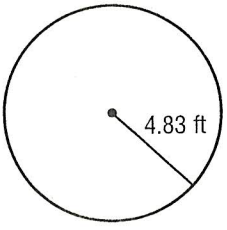

**5.**



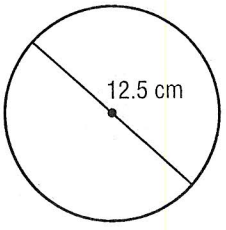

**6.**



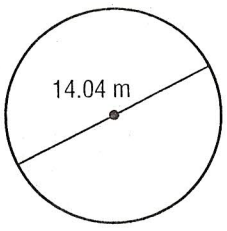

**7.**



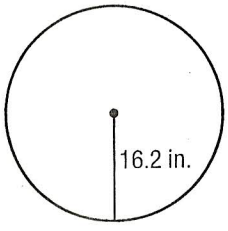

**8.**



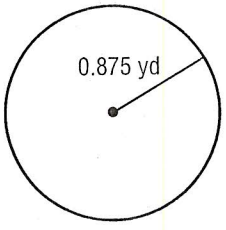

**9.**



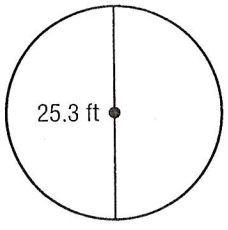

**10.**




**11.**




**12.**




**13.** $r = 13$ cm

**14.** $d = 4.1$ ft

**15.** $r = 22$ mm

**16.** $d = 1.25$ in.

**17.** $r = 10.6$ mi

**18.** $d = 14.23$ yd

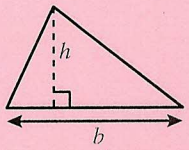
Lesson 4–6

# Sixth Grade
# Math Vocabulary
# 6.12 – Circumference and Area

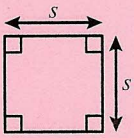
| | |
|---|---|
| 1. Chord - | A line segment with endpoints on a circle. |
| 2. Circle - | The set of points in a plane that are the same distance from a given point called the center of the circle. |
| 3. Circumference - | The distance around a circle. |
| 4. Diameter - | A line segment through the center of a circle, with endpoints on the circle. |
| 5. Radius - | A line segment with one endpoint at the center of a circle. |

# Grade 6 Mathematics Formula Sheet

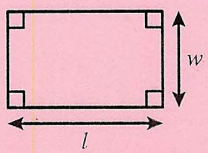
## Geometric Formulas



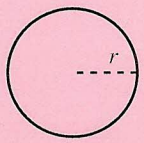

$A = \frac{1}{2}bh$




$p = 4s$
$A = s^2$




$p = 2l + 2w$
$A = lw$




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

## Pi

$\pi \approx 3.14$

$\pi \approx \frac{22}{7}$

## Abbreviations

| | |
|---|---|
| milligram | mg |
| gram | g |
| kilogram | kg |
| milliliter | mL |
| liter | L |
| kiloliter | kL |
| millimeter | mm |
| centimeter | cm |
| meter | m |
| kilometer | km |
| square centimeter | $cm^2$ |
| cubic centimeter | $cm^3$ |

| | |
|---|---|
| ounce | oz |
| pound | lb |
| quart | qt |
| gallon | gal. |
| inch | in. |
| foot | ft |
| yard | yd |
| mile | mi. |
| square inch | sq in. |
| square foot | sq ft |
| cubic inch | cu in. |
| cubic foot | cu ft |

| | |
|---|---|
| area | $A$ |
| perimeter | $p$ |
| circumference | $C$ |

| | |
|---|---|
| year | yr |
| month | mon |
| hour | hr |
| minute | min |
| second | sec |





GO ON

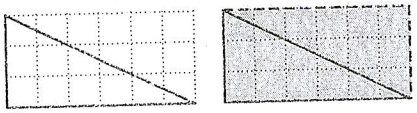
Name _____ Date _____ Class _____

LESSON 10-2

# Reteach

## Area of Triangles and Trapezoids

To find the area of a triangle, first turn your triangle into a rectangle.



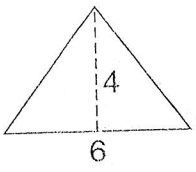
Next, find the area of the rectangle. $6 \cdot 3 = 18$

The triangle is half the area of the formed rectangle or $A = \frac{1}{2}bh$, so divide the product by 2.

$18 \div 2 = 9$ So, the area of the triangle is 9 square units.

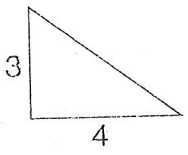
**Find the area of each triangle.**

1.



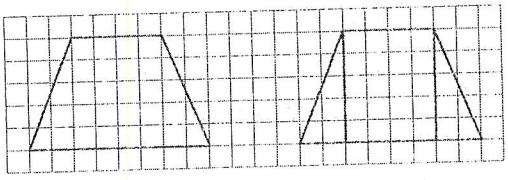

_____

2.




_____

To find the area of a trapezoid, first turn the trapezoid into two triangles and a rectangle.



Find the area of each triangle.

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

$A = \frac{1}{2}(2 \cdot 5) = \frac{1}{2} \cdot 10 = 5$

Find the area of the rectangle.

$A = lw$

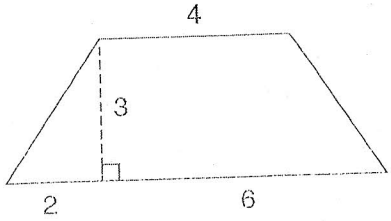
$A = 4 \cdot 5 = 20$

Now find the sum of the areas.

$5 + 5 + 20 = 30$ So, the area of the trapezoid is 30 square units.

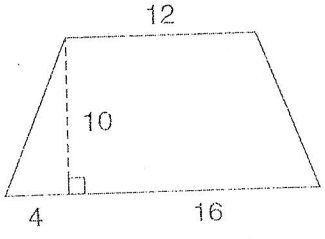
**Find the area of each trapezoid.**

3.




_____

4.




_____

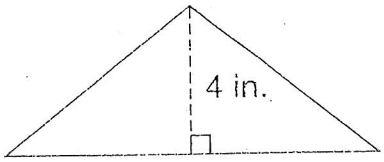
Name _____ Date _____ Class _____

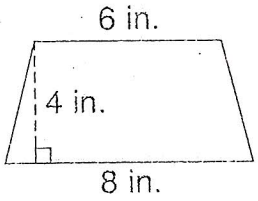
LESSON 10-2

# Reading Strategies

## *Follow a Procedure*

Triangles and trapezoids are two different types of polygons. You can follow a procedure to help you find the area of each type of polygon.




| Step 1: Use the formula $A = \frac{1}{2}bh$. |
|---|
| ↓ |
| Step 2: Substitute the length of the base for $b$. |
| ↓ |
| Step 3: Substitute the length of the height for $h$. |
| ↓ |
| Step 4: Multiply. |

| Step 1: Use the formula $A = \frac{1}{2}h(b_1 + b_2)$. |
|---|
| ↓ |
| Step 2: Substitute the length of the height for $h$. |
| ↓ |
| Step 3: Substitute the lengths of the bases for $b_1$ and $b_2$ and add. |
| ↓ |
| Step 4: Multiply. |

**Answer each question.**

1. What is the first step in finding the area of the triangle?

_____

2. What are the second and third steps in finding the area of the triangle?

_____

3. What is the area of the triangle?

_____

4. What is the first step in finding the area of the trapezoid?

_____

5. What are the second and third steps in finding the area of the trapezoid?

_____

6. What is the area of the trapezoid?

_____

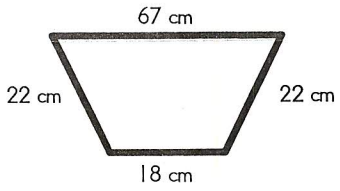
Name: _____

# Perimeter

Perimeter is the distance around a polygon.
Find the perimeter of each polygon by adding the length of the sides.


*Rectangle*

Perimeter = _____

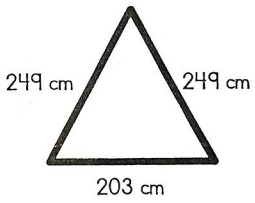



*Trapezoid*

Perimeter = _____

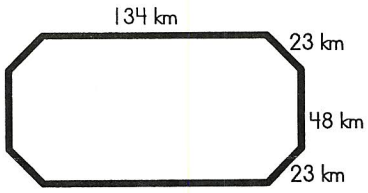

*Square*

Perimeter = _____



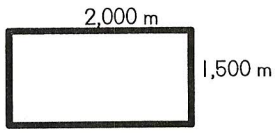

*Isosceles Triangle*

Perimeter = _____



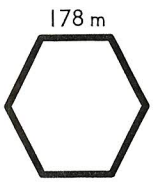

*Octagon (Symmetrical)*

Perimeter = _____




*Rectangle*

Perimeter = _____

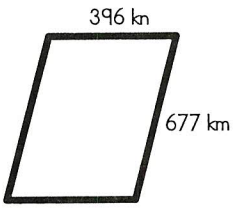



*Hexagon (All sides are the same length)*

Perimeter = _____


*Square / Diamond*

Perimeter = _____




*Parallelogram*

Perimeter = _____

## Bonus Box

Five of the shapes above are quadrilaterals.
Do you know which ones they are?
Shade in the five quadrilaterals.

Name: Date:

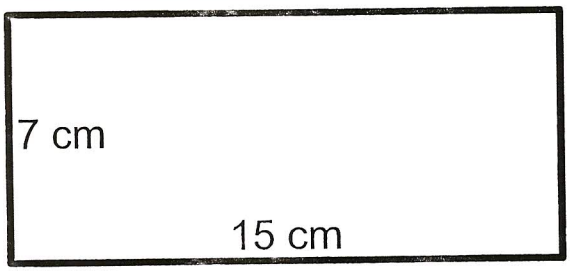
# Area

*How can you tell if there's an elephant in your sandwich? You can't pick it up.*

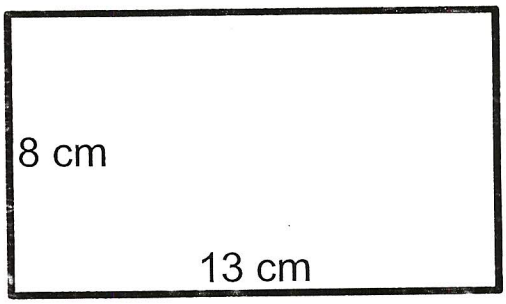
Using the given measurements, find the area of each rectangle.

www.atozteacherstuff.com

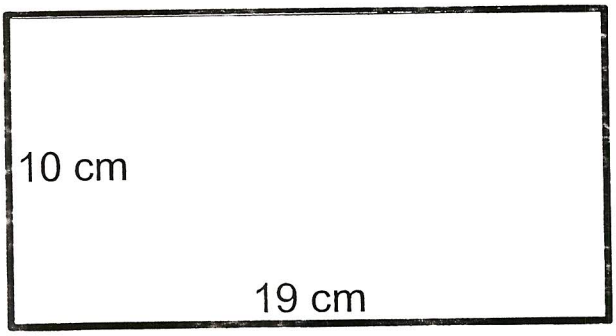
① _____



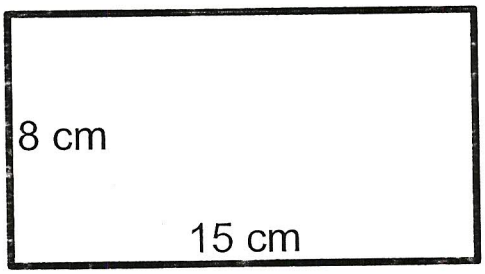

② _____



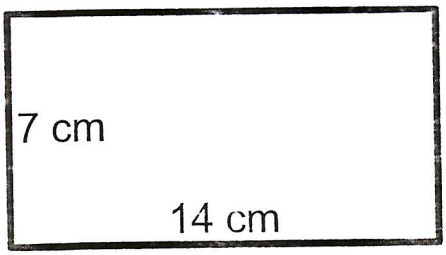

③ _____



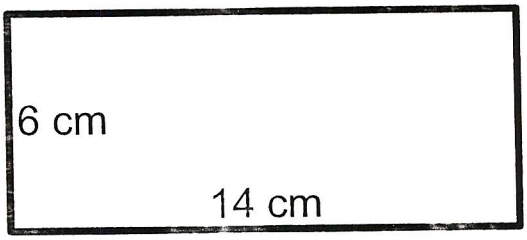

④ _____




⑤ _____




⑥ _____





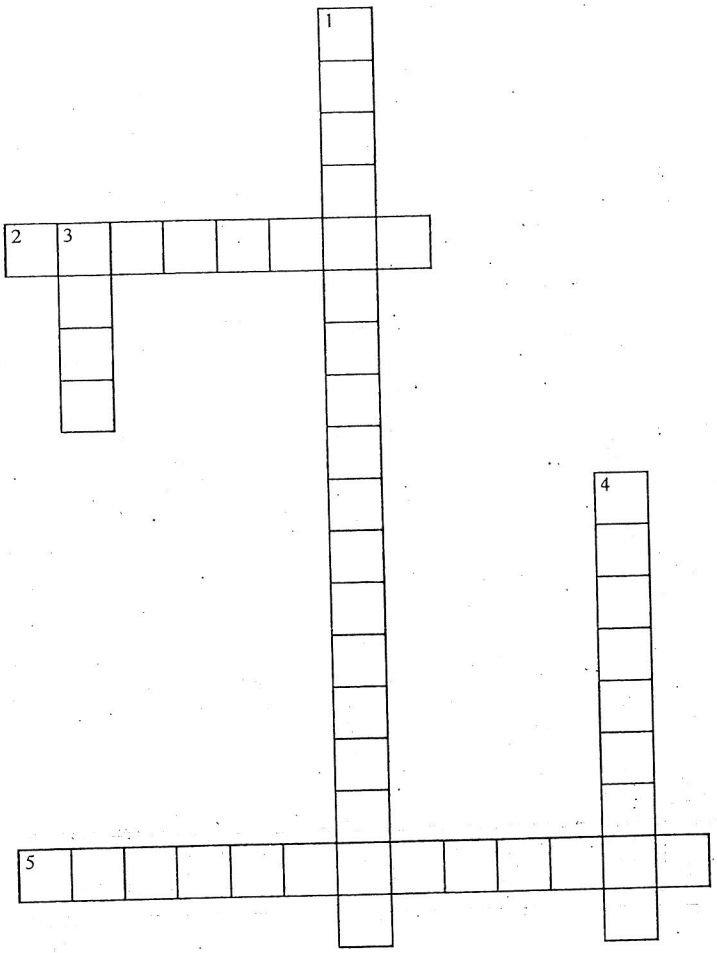

Score:

Name: _____ Number: _____

Date: _____

# Vocabulary – Crossword

## SOL 6.11 – Perimeter and Area




**ACROSS**

**2** Lines or line segments that never cross and remain the same distance apart.

**5** Lines in a plane that do not intersect.

**DOWN**

**1** Lines that intersect to form 90° angles, or right angles.

**3** The number of square units needed to cover a given surface.

**4** The distance around a polygon.

Name _____
Class Period _____
Date _____

# S.O.L. 6.11 and 6.12 Vocabulary Quiz

1. _____ The distance around a polygon.

2. _____ Lines that intersect to form 90 degree angles, or right angles.

3. _____ The number of square units needed to cover a given surface.

4. _____ Lines in a plane that do not intersect.

5. _____ Lines or line segments that never cross and remain the same distance apart.

Perpendicular Lines  Area  Parallel  Perimeter  Parallel Lines

1. _____ A line segment with endpoints on a circle.

2. _____ The distance around a circle.

3. _____ A line segment through the center of a circle, with endpoints on the circle.

4. _____ The set of points in a plane that are the same distance from a given point called the center of the circle.

5. _____ A line segment with one endpoint at the center of a circle and the other endpoint on the circle.

Circle  Radius  Chord  Diameter  Circumference

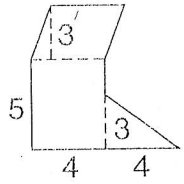
Name _____ Date _____ Class _____

LESSON 10-3 **Reteach**

## *Area of Composite Figures*

Sometimes you can use area formulas you know to help you find the area of other figures.

To find the area of the figure below, first divide the figure into figures you know.




The figure is made up of a triangle, a parallelogram, and a rectangle.

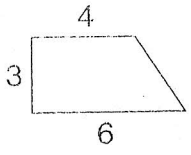
Next, find the area of each figure.

| Triangle | Parallelogram | Rectangle |
|---|---|---|
| $A = \frac{1}{2}bh$ | $A = bh$ | $A = \ell w$ |
| $= \frac{1}{2}(3 \cdot 4)$ | $= 3 \cdot 4$ | $= 4 \cdot 5$ |
| $= 6$ | $= 12$ | $= 20$ |

Then, find the sum of all of the areas.

$6 + 12 + 20 = 38$ The area of the figure is 38 square units.

**Find the area of each figure.**

1. 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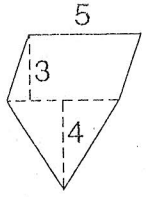
2. 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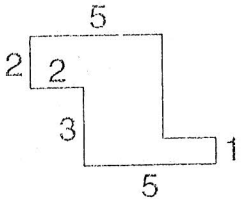
3. 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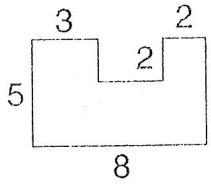
4. 


_____

Name _____ Date _____ Class _____

LESSON 10-3

# Reading Strategies

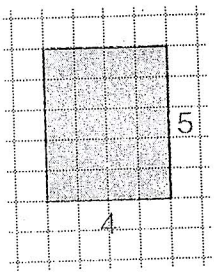
## Use a Flowchart

To find the area of a rectangle, multiply the length by the width.

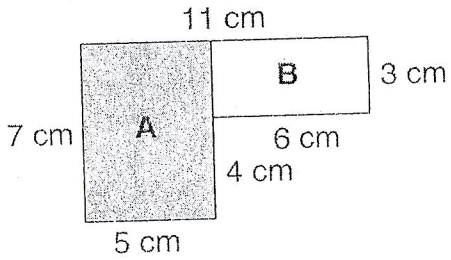
$A = \ell \cdot w$

$A = 4 \text{ units} \cdot 5 \text{ units}$

$A = 20 \text{ square units}$




If a polygon is made up of more than one rectangle, you can find its area by using the flowchart below.




**Step 1:** Separate the polygon into rectangles.

↓

**Step 2:** Mark the length and width of each rectangle.

↓

**Step 3:** Find the area of each rectangle.

↓

**Step 4:** Add the areas of all of the rectangles together.

**Answer the following questions.**

1. What is the formula for the area of a rectangle? _____
2. What are the length and width of rectangle A? _____
3. What is the area of rectangle A? _____
4. What is the area of rectangle B? _____
5. What do you do with the areas of rectangles A and B to find the area of the polygon? _____
6. What is the area of the polygon? _____

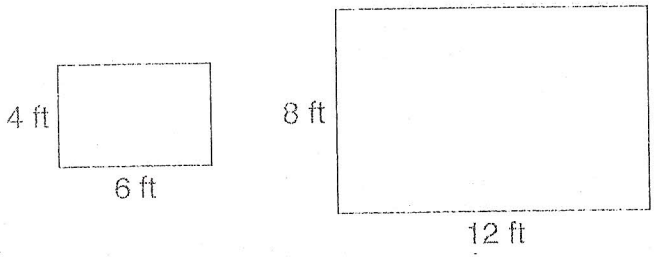
Name _____ Date _____ Class _____

LESSON 10-4

# Reading Strategies

## *Compare and Contrast*

Mark is trying to decide which of two different pens to buy for his dog.




**Answer the following questions.**

1. Compare the shapes of the two pens. How are they alike?

2. Compare the lengths and widths of the two pens. How are they different?

3. What is the perimeter of the smaller pen? Of the larger pen?

4. How do the perimeters of the two pens compare in length?

5. What is the area of the smaller pen? Of the larger pen?

6. How do the areas of the two pens compare in size?

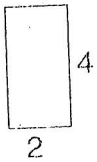
Name _____ Date _____ Class _____

LESSON 10-4

# Reteach

## Comparing Perimeter and Area

When the dimensions of a figure change, the perimeter and area of the figure change.

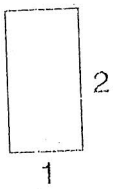



$P = 2\ell + 2w$
$= (2 \cdot 4) + (2 \cdot 2)$
$= 8 + 4$
$= 12$ units

$A = \ell w$
$= 4 \cdot 2$
$= 8$ square units

The dimensions are $\ell = 4$ and $w = 2$.

If each dimension of the rectangle is divided by 2, the perimeter and area change.




$P = 2\ell + 2w$
$= (2 \cdot 2) + (2 \cdot 1)$
$= 4 + 2$
$= 6$ units

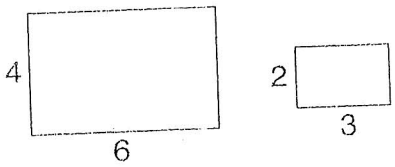
$A = \ell w$
$= 2 \cdot 1$
$= 2$ square units

The new dimensions are $\ell = 2$ and $w = 1$.

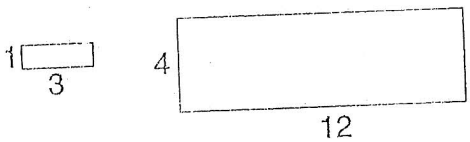
When the dimensions of a rectangle are divided by 2, the perimeter is divided by 2 and the area is divided by 4.

**Write how the perimeter and area change when the dimensions change.**

1.




2.

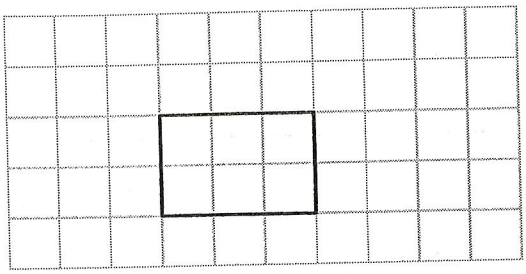


# Counting Area

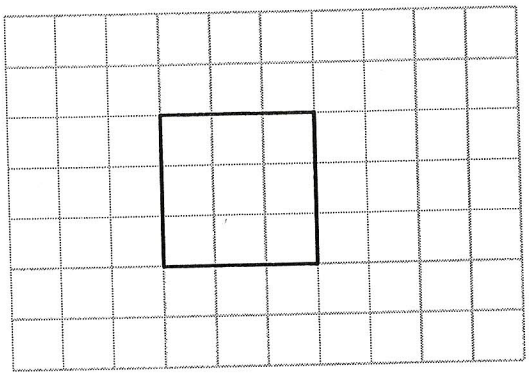
Name: _____ Date: _____

**Use your math skills to find the area of each shape.**

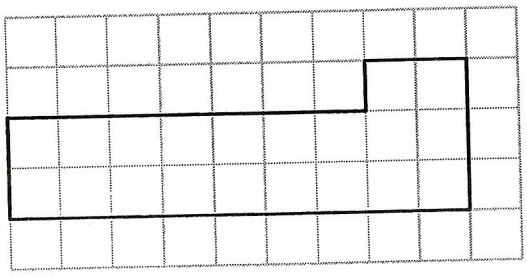
(1)



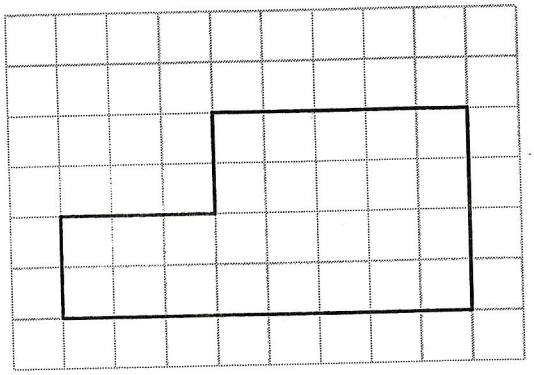
(2)



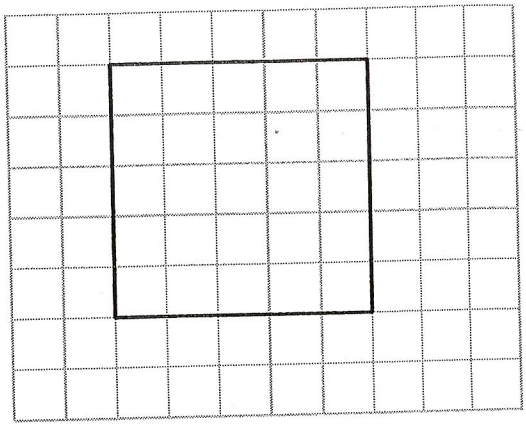
(3)



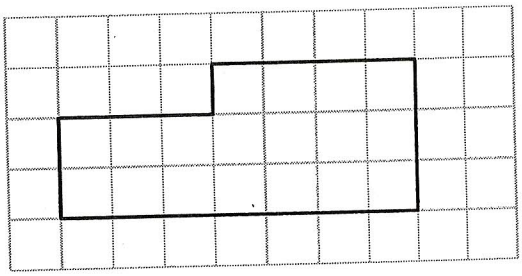
(4)



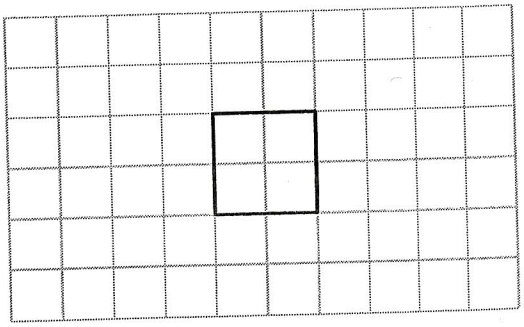
(5)



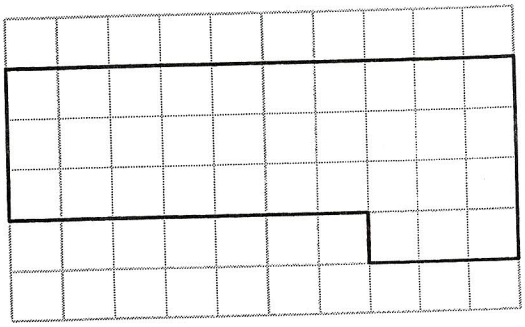
(6)



(7)



(8)



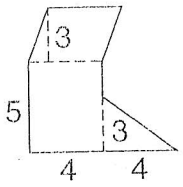
Name _____ Date _____ Class _____

LESSON 10-3 **Reteach**

## Area of Composite Figures

Sometimes you can use area formulas you know to help you find the area of other figures.

To find the area of the figure below, first divide the figure into figures you know.




The figure is made up of a triangle, a parallelogram, and a rectangle.

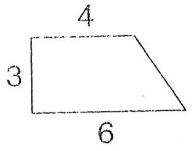
Next, find the area of each figure.

| Triangle | Parallelogram | Rectangle |
|---|---|---|
| $A = \frac{1}{2}bh$ | $A = bh$ | $A = \ell w$ |
| $= \frac{1}{2}(3 \cdot 4)$ | $= 3 \cdot 4$ | $= 4 \cdot 5$ |
| $= 6$ | $= 12$ | $= 20$ |

Then, find the sum of all of the areas.

$6 + 12 + 20 = 38$ The area of the figure is 38 square units.

**Find the area of each figure.**

1. 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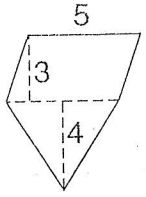
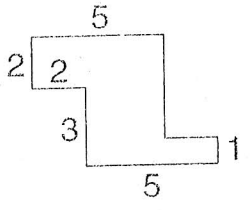
2. 


_____

3. 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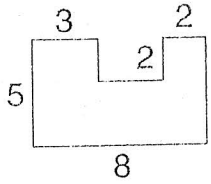
4. 


_____

Name _____ Date _____ Class _____

LESSON 10-3

# Reading Strategies

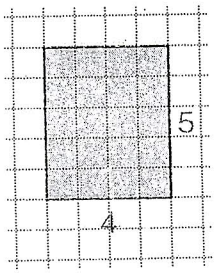
## *Use a Flowchart*

To find the area of a rectangle, multiply the length by the width.

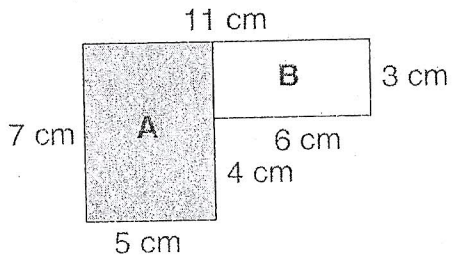
$A = \ell \cdot w$

$A = 4 \text{ units} \cdot 5 \text{ units}$

$A = 20 \text{ square units}$




If a polygon is made up of more than one rectangle, you can find its area by using the flowchart below.




**Step 1:** Separate the polygon into rectangles.

↓

**Step 2:** Mark the length and width of each rectangle.

↓

**Step 3:** Find the area of each rectangle.

↓

**Step 4:** Add the areas of all of the rectangles together.

**Answer the following questions.**

1. What is the formula for the area of a rectangle? _____
2. What are the length and width of rectangle A? _____
3. What is the area of rectangle A? _____
4. What is the area of rectangle B? _____
5. What do you do with the areas of rectangles A and B to find the area of the polygon? _____
6. What is the area of the polygon? _____

NAME _____ DATE _____ PERIOD _____

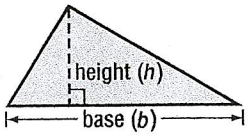
# 14-2 Study Guide and Intervention

## *Area of Triangles*

The area $A$ of a triangle is one half the product of any base $b$ and its height $h$.

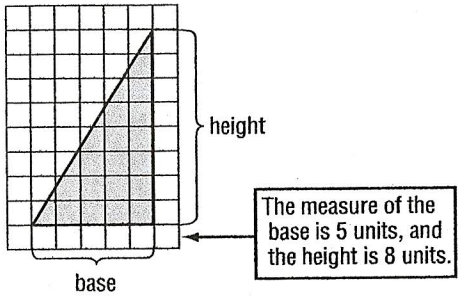
**Symbols** $A = \frac{1}{2}bh$

**Model**




**EXAMPLES** **Find the area of each triangle.**

**1**




$A = \frac{1}{2}bh$ Area of a triangle

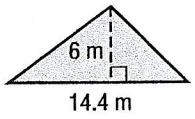
$A = \frac{1}{2}(5)(8)$ Replace $b$ with 5 and $h$ with 8.

$A = \frac{1}{2}(40)$ Multiply. $5 \times 8 = 40$

$A = 20$

The area of the triangle is 20 square units.

**2**




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

$A = \frac{1}{2}(14.4)(6)$ Replace $b$ with 14.4 and $h$ with 6.

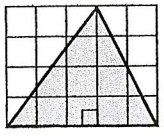
0.5 [×] 14.4 [×] 6 [ENTER] **43.2**

The area of the triangle is 43.2 square meters.

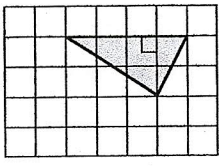
**EXERCISES**

**Find the area of each triangle. Round to the nearest tenth if necessary.**

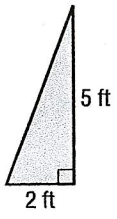
**1.**



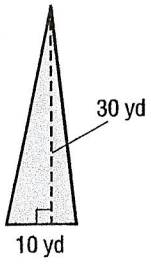
**2.**



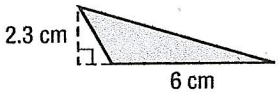
**3.**



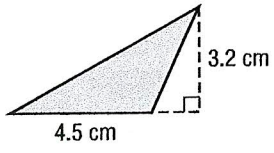

**4.**




**5.**




**6.**



NAME _____ DATE _____ PERIOD ____

# 14-2 Practice: Word Problems

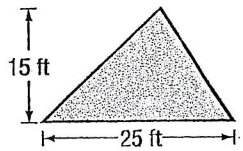
## *Area of Triangles*

**For Exercises 1–6, round to the nearest tenth if necessary.**

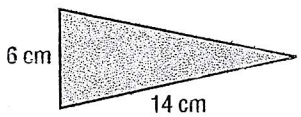
**1. CARPETING** Courtney wants to carpet part of her bedroom that is shaped like a right triangle with base 4 meters and height 5.2 meters. How much carpet will she need?

**2. LAWN** Mrs. Giuntini's lawn is triangle-shaped with a base of 25 feet and a height of 10 feet. What is the area of Mrs. Giuntini's lawn? Explain how you found your answer.

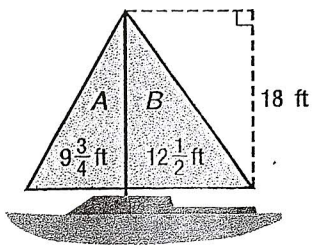
**3. BUILDING** Norma has an A-frame cabin. The back is shown below. How many square feet of paint will she need to cover the back of the cabin?




**4. SNACKS** The dough that will be used to make a pig in a blanket is shown below. Before it is rolled around a sausage, it is brushed with vegetable oil. What is the area that needs to be covered with oil? Explain how you found your answer.




**5. SAILING** Daniel just bought a used sailboat with two sails that need replacing. How much sail fabric will Daniel need if he replaces sail A?




**6. SAILING** Use the picture from Exercise 5. How much sail fabric will Daniel need if he replaces sail B?

Name _____ Date _____ Class _____

LESSON 9-3

# Problem Solving

## Converting Customary Units

**Write the correct answer.**

1. Each side of a professional baseball base must measure 15 inches. What is the base's side length in feet?

_____

2. In the NBA, any shot made from 22 feet or more from the basket is worth 3 points. How many yards from the basket is that?

_____

3. The maximum weight for a professional bowling ball is 16 pounds. What is the maximum weight in ounces?

_____

4. A professional hockey goal is 6 feet wide and 4 feet high. What is the area of the goal in square yards?

_____

5. An NFL football field is 120 yards long. How many times would you have to run across the field to run 1 mile?

_____

6. The official length for a marathon race is 26.2 miles. How many yards long is a marathon? How many feet?

_____

**Circle the letter of the correct answer.**

7. The distance between bases in a professional baseball game is 90 feet. What is the distance between bases in inches?

   **A** 1,000 inches **C** 1,100 inches

   **B** 1,080 inches **D** 10,800 inches

8. What is the area of a baseball diamond in square yards?

   **F** 300 square yards

   **G** 600 square yards

   **H** 900 square yards

   **J** 8,100 square yards

9. An NFL football can be no less than $\frac{87}{96}$ feet long. What is the minimum length for an official football in inches?

   **A** $10\frac{7}{8}$ inches **C** $\frac{87}{1152}$ inches

   **B** $1\frac{3}{32}$ inches **D** $2\frac{69}{96}$ inches

10. An official Olympic-sized swimming pool holds 880,000 gallons of water! How many fluid ounces of water is that?

    **F** 1,4080,000 fluid ounces

    **G** 7,040,000 fluid ounces

    **H** 112,640,000 fluid ounces

    **J** 1,760,000 fluid ounces

NAME _____ DATE _____ PERIOD ____

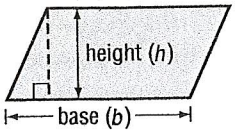
# 14-1 Study Guide and Intervention

## Area of Parallelograms

The area $A$ of a parallelogram is the product of any base $b$ and its height $h$.

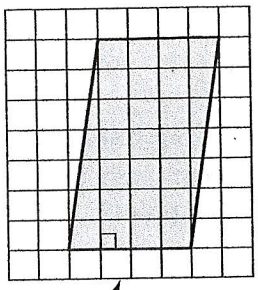
**Symbols** $A = bh$

**Model**




**EXAMPLES** **Find the area of each parallelogram.**

1



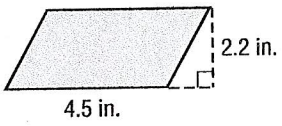

$A = bh$

$A = 4 \times 7$

$A = 28$

The area is 28 square units or 28 units$^2$.

2




$A = bh$

$A = 4.5 \times 2.2$

$A = 9.9$

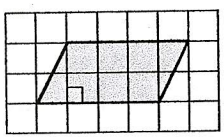
The area is 9.9 square inches or 9.9 in$^2$.

Lesson 14–1

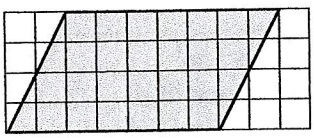
**EXERCISES**

**Find the area of each parallelogram. Round to the nearest tenth if necessary.**

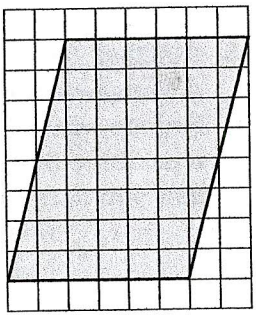
1.



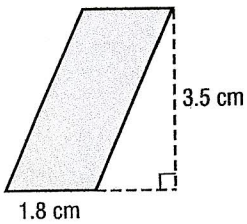
2.



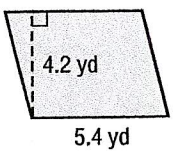
3.



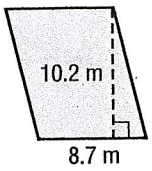
4.




5.




6.



NAME _____ DATE _____ PERIOD _____

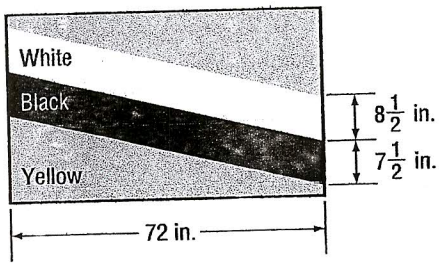
# 14-1 Practice: Word Problems

## *Area of Parallelograms*

**1. SUNFLOWERS** Norman is a sunflower farmer. His farm is in the shape of a parallelogram with a height measuring 3 kilometers and a base measuring 4.2 kilometers. To the nearest tenth of an acre, what is the total land area Norman uses?

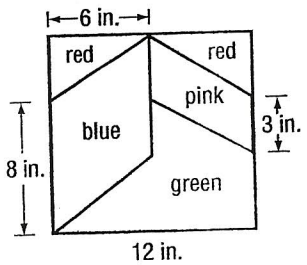
**2. VOLLEYBALL** Ella and Veronica are in charge of making a banner for the volleyball game this Saturday. How much poster paper will they need for a parallelogram-shaped banner with height $3\frac{1}{2}$ feet and base 6 feet? Explain how you found your answer.

**3. FLAGS** Joseph is painting the flag of Brunei (a country in Southeast Asia) for a geography project at school. How many square inches will he cover with white paint?




**4. FLAGS** Use the flag from Exercise 3. How many square inches will Joseph cover with black paint?

**5. QUILTING** The pattern shows the dimensions of a quilting square that Sydney will use to make a quilt. How much blue fabric will she need? Explain how you found your answer.




**6. QUILTING** Use the quilting pattern from Exercise 5. How much pink fabric will Sydney need?

Lesson 14–1

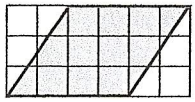
NAME _____ DATE _____ PERIOD _____

# 14-1 Practice: Skills

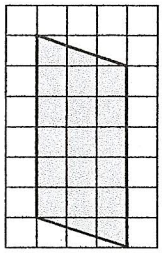
## *Area of Parallelograms*

**Find the area of each parallelogram. Round to the nearest tenth if necessary.**

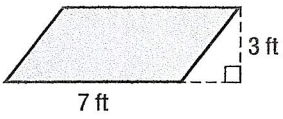
**1.**



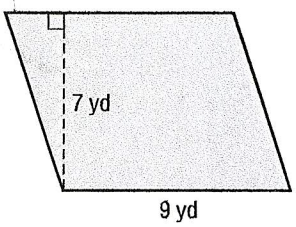
**2.**



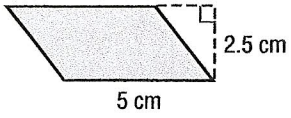
**3.**



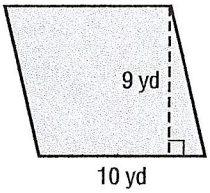

**4.**



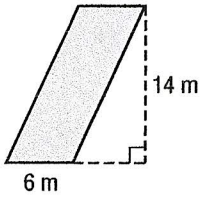

**5.**



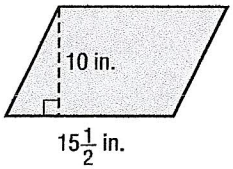

**6.**



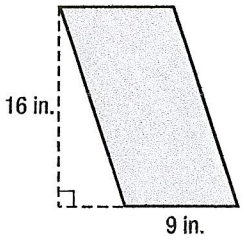

**7.**



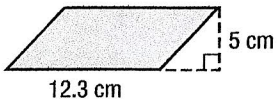

**8.**



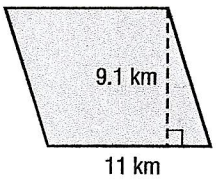

**9.**



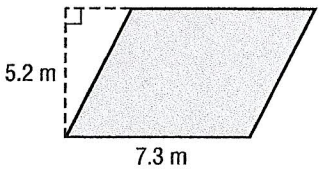

**10.**



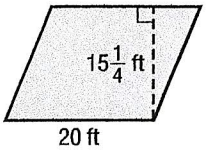

**11.**



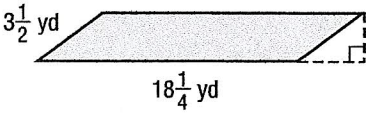

**12.**



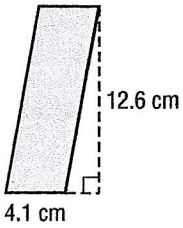

**13.**




**14.**




**15.**




**16.** What is the measure of the area of a parallelogram with a base of $6\frac{2}{3}$ inches and a height of $1\frac{1}{2}$ inches?

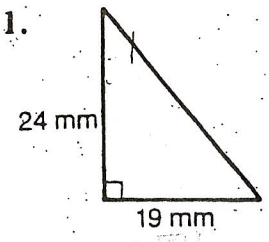
**17.** Find the area of a parallelogram with base $7\frac{1}{5}$ yards and height $1\frac{1}{9}$ yards.

NAME _____

# AREA OF A TRIANGLE

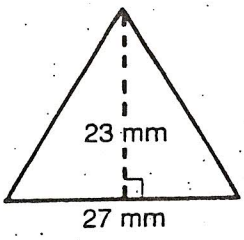
*Find the area of each triangle.*

**1.**



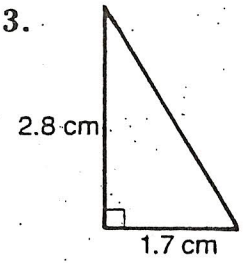

$A =$ _____

**2.**



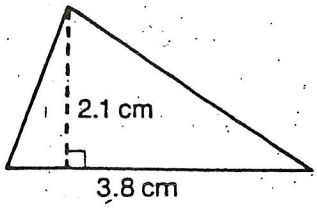

$A =$ _____

**3.**



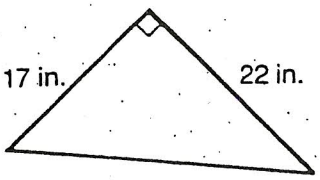

$A =$ _____

**4.**



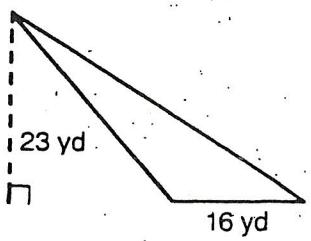

$A =$ _____

**5.**




$A =$ _____

**6.**




$A =$ _____

**7.** $b = 13$ mm
$h = 29$ mm

area = _____

**8.** $b = 1.4$ cm
$h = 2.3$ cm

area = _____

**9.** $b = 34$ m
$h = 8$ m

area = _____

NAME _____ DATE _____ PERIOD ____

# 12-5 Study Guide and Intervention

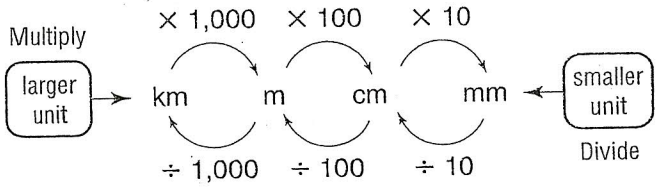
## Changing Metric Units

To change from one unit to another within the metric system, you can either multiply or divide by powers of ten.

| 1,000 | 100 | 10 | 1 | 0.1 | 0.01 | 0.001 |
|---|---|---|---|---|---|---|
| thousands | hundreds | tens | ones | tenths | hundredths | thousandths |
| kilo | hecto | deka | basic unit | deci | centi | milli |

Each place value is 10 times the place value to its right.

- To change from larger units to smaller units, multiply.
- To change from smaller units to larger units, divide.




**EXAMPLES** **Complete.**

**1** **650 cm = ? m**

Since 1 meter = 100 centimeters, divide by 100. 650 ÷ 100 = 6.5
So, 650 cm = 6.5 m.

**2** **? mL = 3.2 L**

Since 1 liter = 1,000 milliliters, multiply by 1,000. 3.2 × 1,000 = 3,200
So, 3,200 mL = 3.2 L.

**3** **9,100 g = ? kg**

Since 1 kilogram = 1,000 grams, divide by 1,000. 9,100 ÷ 1,000 = 9.1
So, 9,100 g = 9.1 kg.

**CHECK** Since a kilogram is a larger unit than a gram, the number of kilograms should be less than the of grams. The answer seems reasonable.

**EXERCISES**

**Complete.**

1. 2.5 L = ? mL
2. 400 mm = ? cm
3. 8.4 g = ? mg
4. 25 cm = ? mm
5. 4,100 cm = ? m
6. 3.2 m = ? mm
7. ? m = 5.6 km
8. 1,900 g = ? kg
9. 0.6 kg = ? g
10. 6.21 L = ? mL
11. 900 mg = ? g
12. ? km = 500 m

NAME _____ DATE _____ PERIOD ____

# 12-5 Practice: Skills

## *Changing Metric Units*

**Complete.**

**1.** 530 mm = __?__ cm

**2.** 23 kg = __?__ g

**3.** 1,500 mL = __?__ L

**4.** __?__ m = 340 cm

**5.** 13 cm = __?__ mm

**6.** 16 g = __?__ mg

**7.** 3.72 L = __?__ mL

**8.** __?__ cm = 9.75 m

**9.** 149 cm = __?__ m

**10.** __?__ m = 524 cm

**11.** __?__ g = 0.56 kg

**12.** 3 mm = __?__ cm

**13.** 1.5 km = __?__ m

**14.** 4,200 mm = __?__ m

**15.** __?__ L = 650 mL

**16.** 2.5 L = __?__ mL

**17.** 13.2 m = __?__ cm

**18.** __?__ mm = 8.3 m

**19.** 2 kg = __?__ mg

**20.** 6,000,000 mm = __?__ km

**21.** 0.89 m = __?__ cm

**22.** 0.085 g = __?__ mg

**23.** __?__ m = 4,600 mm

**24.** __?__ kg = 7,124 g

**25.** __?__ cm = 40 mm

**26.** __?__ m = 7 km

**27.** __?__ mL = 0.0817 L

**28.** 480 mL = __?__ L

**29.** 5,000 mg = __?__ kg

**30.** 4.8 km = __?__ cm

Name: _____ Date: _____

# 6.9 Perimeter and Area Tutorial Worksheet

**Directions: As you watch the tutorial video, fill in the blanks for questions 1-6.**

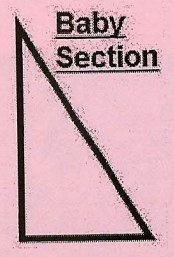
**1.** The _____ of a polygon is the measure of the distance around the polygon.

**2.** The _____ of a polygon is the number to square units required to fill the polygon.

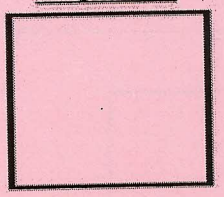
**Use the graphic to the left, complete questions 3-8. (Writing the measurements may help you to complete the questions.)**

Jungle Gym

Baby Section



Playhouse



**3.** What is the formula for finding the perimeter of a rectangle?

_____

**4.** What is the perimeter of the Jungle Gym?

_____

**5.** What is the formula for finding the perimeter of a triangle?

_____

**6.** What is the perimeter of the Baby Section?

_____

**7.** What is the formula for finding the perimeter of a square?

_____

**8.** What is the perimeter of the Play House?

_____

**Once the tutorial is complete, try problems 1-10 on your own.**

**1.** Find the perimeter of a rectangular yard that is 80 ft by 100 ft.

_____

**2.** Find the area of a rectangular yard that is 80 ft by 10 ft.

_____

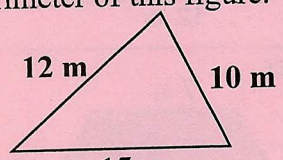
**3.** Find the perimeter of a square that has each side of length 5 inches.

_____

**4.** Find the area of a square that has each side of length 5 inches.

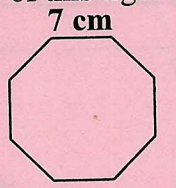
_____

**5.** Find the perimeter of this figure.



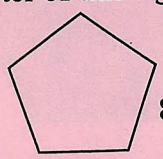

_____

**6.** Find the perimeter of this figure.



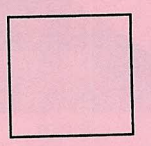

_____

**7.** Find the perimeter of this figure.



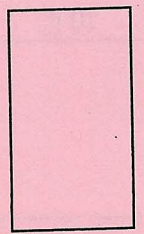

_____

**8.** Find the area of this figure.



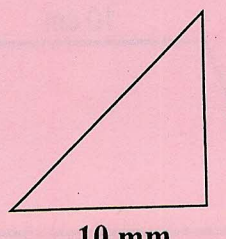

_____

**9.** Find the area of this figure.




_____

**10.** Find the area of this figure.




_____

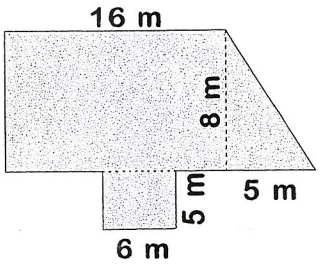
Name_____ Date_____

# Practice Questions

## 6.9 Perimeter and Area

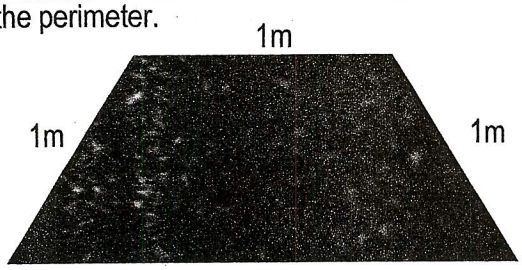
**Now you are ready to work out 10 practice questions. You may use your notes to answer the problems. Remember to show your work! Your answers will be turned in to your teacher.**

**1.** Find the area.



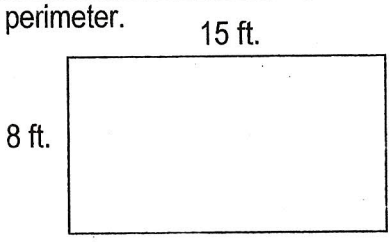

_____

**2.** Find the perimeter.



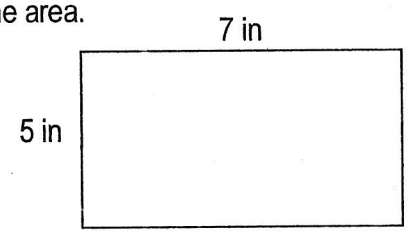

_____

**3.** Find the perimeter.



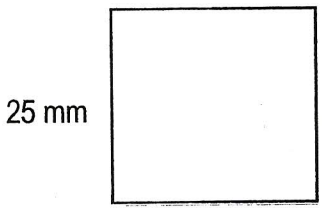

_____

**4.** Find the area.



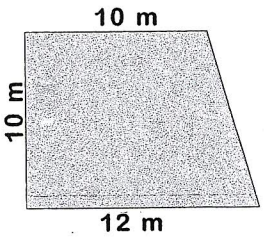

_____

**5.** Find the perimeter.



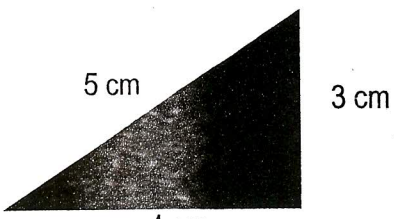

_____

**6.** Find the area.



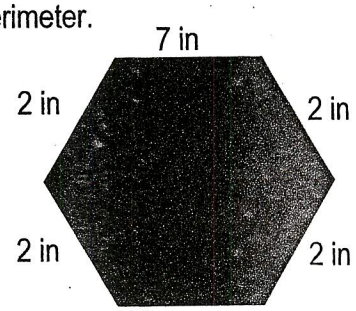

_____

**7.** Find the perimeter.



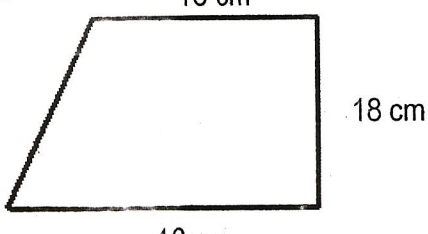

_____

**8.** Find the perimeter.



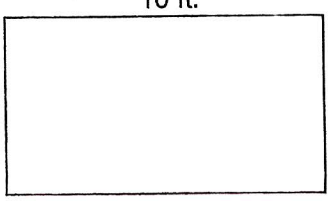

_____

**9.** Find the area.




_____

**10.** Find the perimeter.




_____

Name _____
Class Period _____

## Class Practice

**Mrs. Dinato remembered the area of the top of her rectangular table was between 1,500 and 2,000 square inches. Which could be the dimensions of her table?**

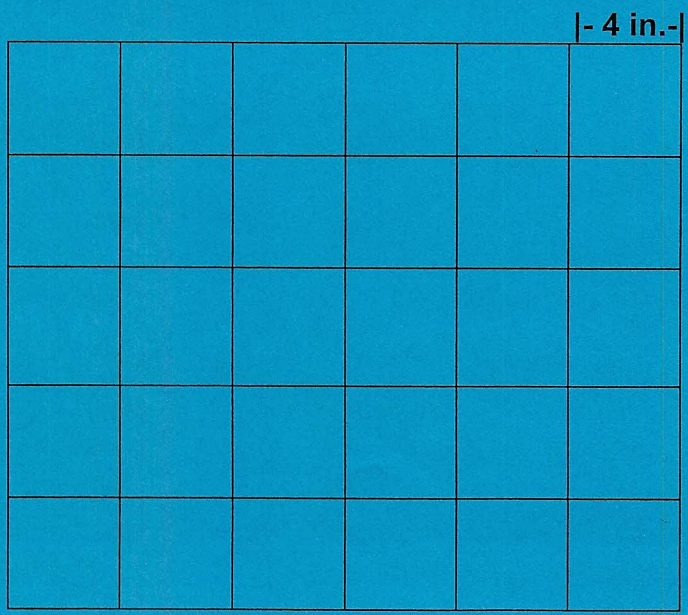
**F** 72 in.× 36 in.

**G** 60 in.× 30 in.

**H** 40 in.× 30 in.

**J** 18 in. × 32 in.

**What is the area of the large rectangle shown if each small square is 4 inches wide and 4 inches long?**




**A** 480 sq in.

**B** 120 sq in.

**C** 80 sq in.

**D** 30 sq in.

**If the diameter of a circle is 7 inches, which is closest to the circumference?**

**F** 21.98 in.

**G** 38.47 in.

**H** 43.96 in.

**J** 153.86 in.

**Circle A has a radius of 1.74 centimeters. Circle B has a radius that is twice as long as Circle A's. What is the diameter of Circle B? [p. 46]**

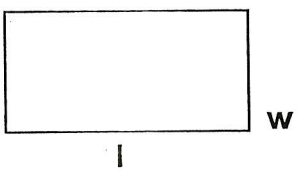
**A** 0.87 centimeters

**B** 3.48 centimeters

**C** 6.96 centimeters

**D** 13.92 centimeters

**Simon wants to know the area of the playground. Which formula should he use to find it? [p. 5]**




**F** l + l + w +w

**G** 2lw

**H** l X w

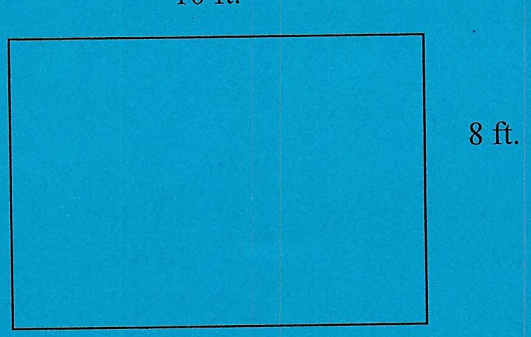
**J** $\frac{1}{2}$bh

Name _____

Class Period _____

## Homework – Area and Perimeter Review

1. Jill drew a diagram of her room. She wants to buy new carpet for her room. How much carpet will Jill need to purchase?




A 18 ft.$^2$

B 36 ft.$^2$

C 40 ft.$^2$

D 80 ft.$^2$

2. Jill also decided that if she installed new carpet she should also replace her baseboard. Based on the above dimensions, how much baseboard would Jill need to purchase?

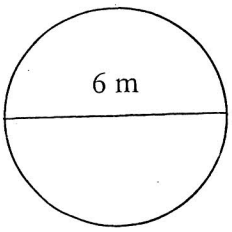
F 18 ft.$^2$

G 36 ft.$^2$

H 40 ft.$^2$

J 80 ft.$^2$

3. What is the circumference of this circle?




Show your work!

My answer is _____.

4. What is the area of the above circle?

Show your work!

My answer is _____.

Name _____ Class _____ Date _____

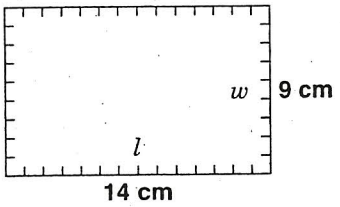
# Perimeters and Areas of Rectangles

**Perimeter**

The *perimeter* of a figure is the sum of the lengths of its sides. Opposite sides of a rectangle are equal. To find the perimeter, add the 2 lengths ($l$) and the 2 widths ($w$).

$P = l + l + w + w$ or $P = 2l + 2w$

Find the perimeter.




$P = 2l + 2w$
$= 2(14) + 2(9)$
$= 28 + 18 = 46$ cm

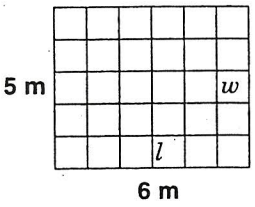
The perimeter is 46 cm.

**Area**

The *area* of a figure is the number of square units needed to cover the figure. To find the area of a rectangle, multiply the length ($l$) and the width ($w$).

$A = l \times w$

Find the area.



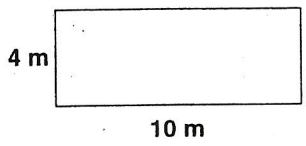

$A = l \times w$
$= 6 \times 5$
$= 30$ m$^2$

The area is 30 m$^2$.

---

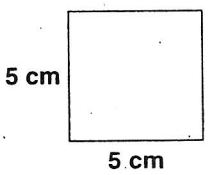
**Find the perimeter and area of each rectangle.**

**1.**



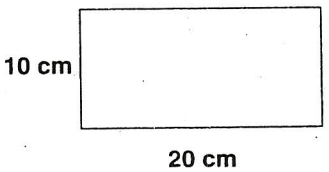

_____

**2.**




_____

**3.**




_____

**Find the perimeter and area of each rectangle.**

**4.** $l = 12$ cm, $w = 2$ cm

_____

**5.** $l = 9$ ft, $w = 7.5$ ft

_____

**6.** $l = 2.5$ m, $w = 1.5$ m

_____

**7.** $l = 5.5$ in., $w = 5.5$ in.

_____

**8.** $l = 6.2$ in., $w = 3.4$ in.

_____

**9.** $l = 4.5$ ft, $w = 0.75$ ft

_____

**10.** $l = 17$ cm, $w = 8$ cm

_____

**11.** $l = 10.5$ m, $w = 5.2$ m

_____

**12.** $l = 22$ in., $w = 9$ in.

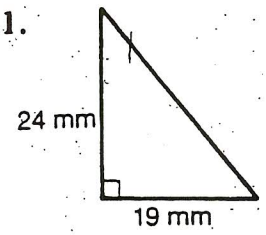
_____

NAME _____

# AREA OF A TRIANGLE

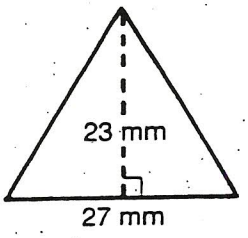
*Find the area of each triangle.*

**1.**



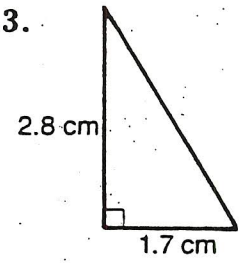

$A =$ _____

**2.**



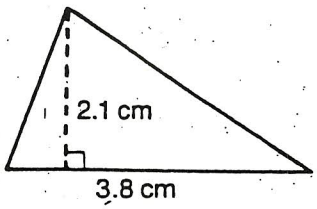

$A =$ _____

**3.**



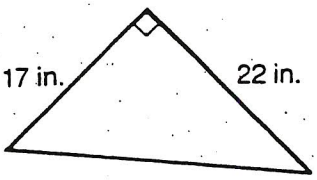

$A =$ _____

**4.**



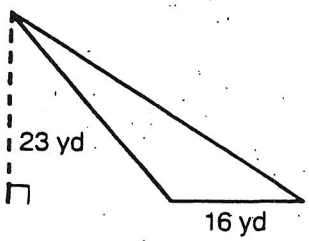

$A =$ _____

**5.**




$A =$ _____

**6.**




$A =$ _____

**7.** $b = 13$ mm
$h = 29$ mm

area = _____

**8.** $b = 1.4$ cm
$h = 2.3$ cm

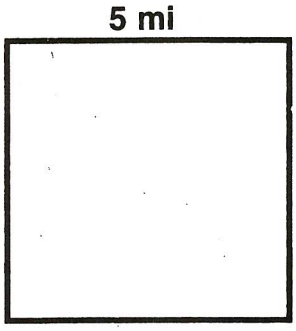
area = _____

**9.** $b = 34$ m
$h = 8$ m

area = _____

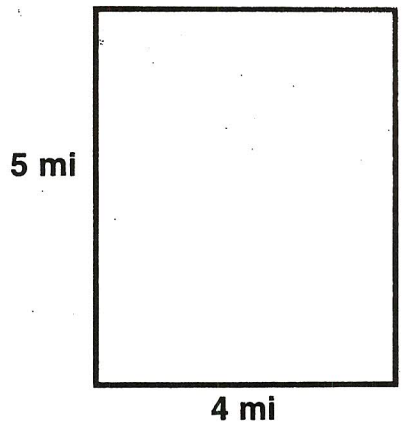
**Find the perimeter of each figure.**

1.



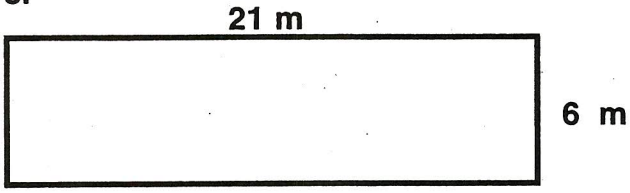

_____

2.



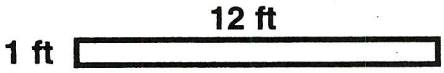

_____

3.




_____

4.

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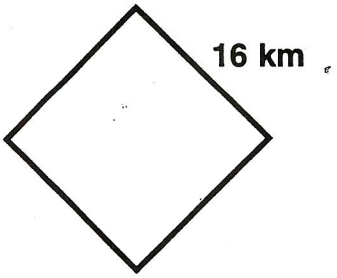
5.

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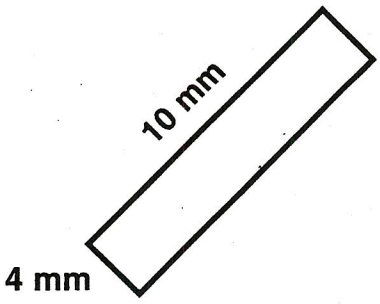
6.




_____

Name _____ Class _____ Date _____

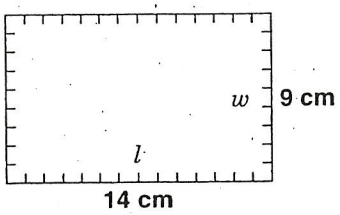
# Perimeters and Areas of Rectangles

**Perimeter**

The *perimeter* of a figure is the sum of the lengths of its sides. Opposite sides of a rectangle are equal. To find the perimeter, add the 2 lengths ($l$) and the 2 widths ($w$).

$P = l + l + w + w$ or $P = 2l + 2w$

Find the perimeter.




$P = 2l + 2w$
$= 2(14) + 2(9)$
$= 28 + 18 = 46$ cm

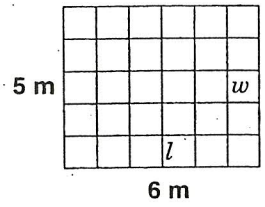
The perimeter is 46 cm.

**Area**

The *area* of a figure is the number of square units needed to cover the figure. To find the area of a rectangle, multiply the length ($l$) and the width ($w$).

$A = l \times w$

Find the area.



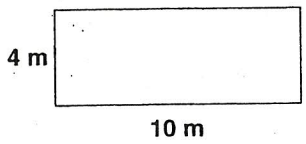

$A = l \times w$
$= 6 \times 5$
$= 30$ m$^2$

The area is 30 m$^2$.

---

**Find the perimeter and area of each rectangle.**

1.

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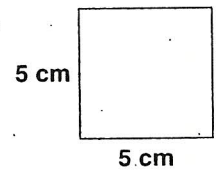
2.

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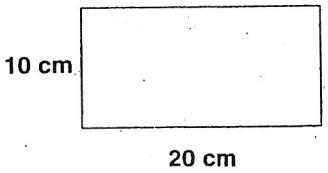
3.




_____

**Find the perimeter and area of each rectangle.**

4. $l = 12$ cm, $w = 2$ cm

_____

5. $l = 9$ ft, $w = 7.5$ ft

_____

6. $l = 2.5$ m, $w = 1.5$ m

_____

7. $l = 5.5$ in., $w = 5.5$ in.

_____

8. $l = 6.2$ in., $w = 3.4$ in.

_____

9. $l = 4.5$ ft, $w = 0.75$ ft

_____

10. $l = 17$ cm, $w = 8$ cm

_____

11. $l = 10.5$ m, $w = 5.2$ m

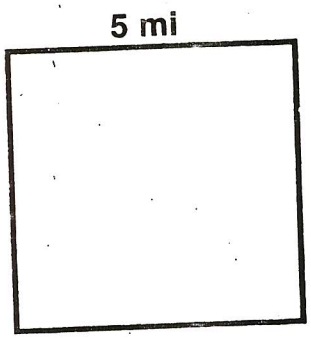
_____

12. $l = 22$ in., $w = 9$ in.

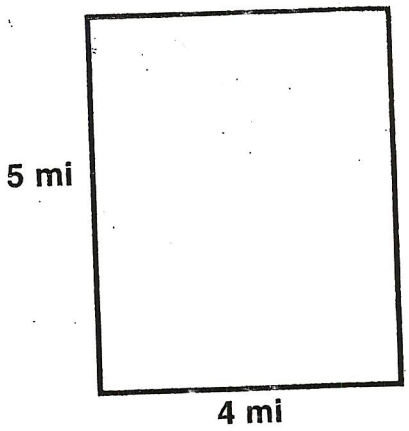
_____

**Find the perimeter of each figure.**

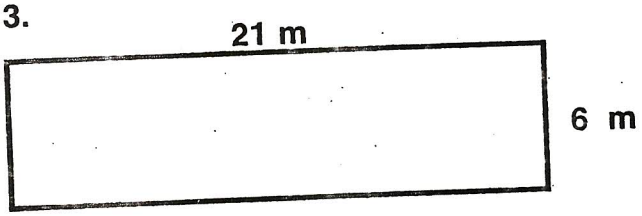
1.



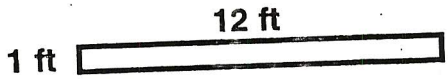

2.



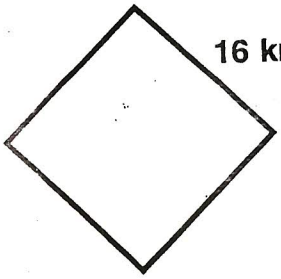

3.



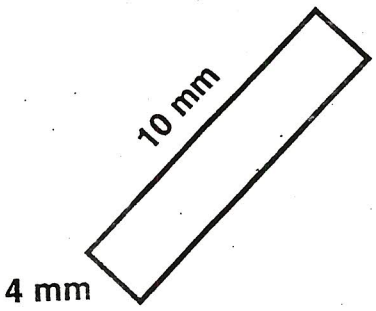

4.




5.




6.



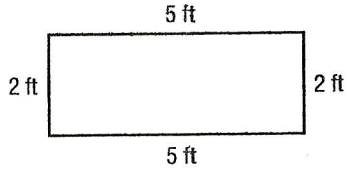
NAME _____ DATE _____ PERIOD _____

# 4-5 Practice: Skills

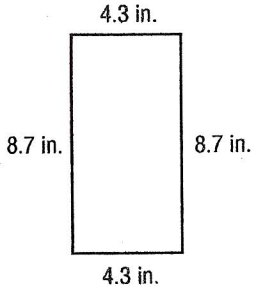
## *Perimeter*

**Find the perimeter of each figure.**

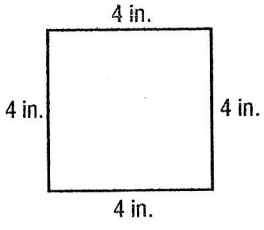
**1.**



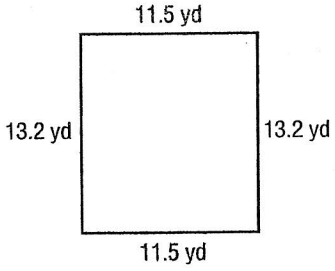

**2.**



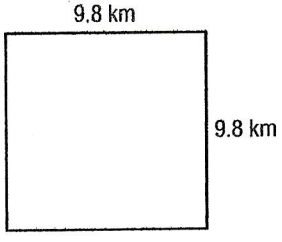

**3.**



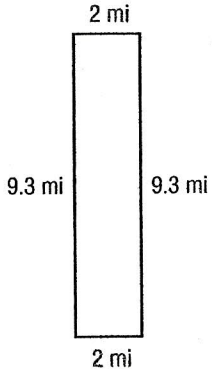

**4.**



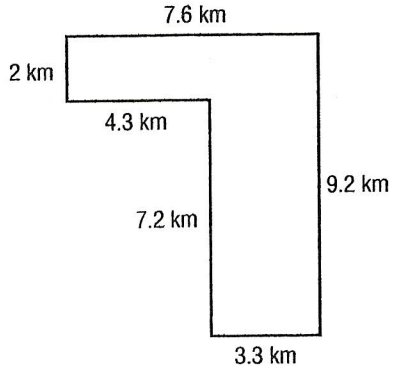

**5.**



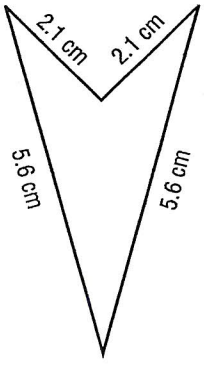

**6.**




**7.**




**8.**



NAME _____ DATE _____ PERIOD ____

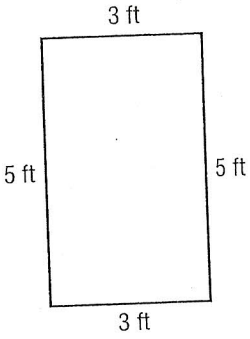
# 4-5 Study Guide and Intervention

## Perimeter

The distance around any closed figure is called its **perimeter**. To find the perimeter, add the measures of all the sides of the figure.

| Finding Perimeter | | |
|---|---|---|
| **Figure** | **Words** | **Symbols** |
| Rectangle | The perimeter $P$ of a rectangle is the sum of the lengths and widths. It is also two times the length $\ell$ plus two times the width $w$. | $P = \ell + \ell + w + w$<br>$P = 2\ell + 2w$ |
| Square | The perimeter $P$ of a square is four times the measure of any of its sides $s$. | $P = 4s$ |

**EXAMPLE 1** **Find the perimeter of the rectangle.**

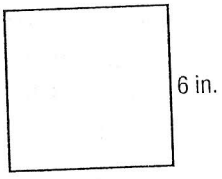



**Estimate:** $5 + 5 + 5 + 5 = 20$

| | |
|---|---|
| $P = 2\ell + 2w$ | Write the formula. |
| $P = 2(5) + 2(3)$ | Replace $\ell$ with 5 and $w$ with 3. |
| $P = 10 + 6$ | Multiply. |
| $P = 16$ | Add. |

The perimeter of the rectangle is 16 feet. Compared to the estimate, the answer is reasonable.

**EXAMPLE 2** **Find the perimeter of the square.**



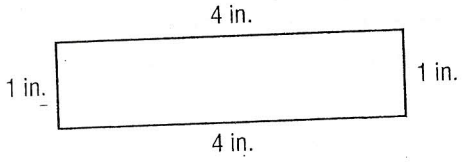

| | |
|---|---|
| $P = 4s$ | Write the formula. |
| $P = 4(6)$ | Replace $s$ with 6. |
| $P = 24$ | Multiply. |

The perimeter of the square is 24 inches.

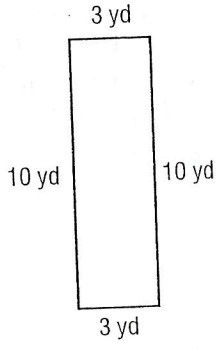
**EXERCISES**

**Find the perimeter of each figure.**

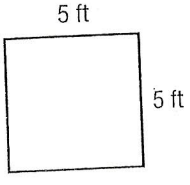
**1.**




**2.**




**3.**



NAME _____ DATE _____ PERIOD _____

# 4-5 Practice: Word Problems

## *Perimeter*

| | |
|---|---|
| 1. **GEOGRAPHY** The state of Colorado is nearly rectangular. It is about 589 kilometers by 456 kilometers. What is the perimeter of Colorado? | 2. **FRAMING** How many inches of matting is needed to frame an 8.5 inch by 11 inch print? |
| 3. **GARDENING** Jessica wants to put a fence around her 10.5 foot by 13.75 foot rectangular garden. How many feet of fencing will she need? | 4. **SEWING** Amy is making pillows to decorate her bed. She is going to make three square pillows that are each 2 feet by 2 feet. She wants to use the same trim around each pillow. How many feet of trim will she need for all three pillows? |
| 5. **JOGGING** Before soccer practice, Jovan warms up by jogging around a soccer field that is 100 yards by 130 yards. How many yards does he jog if he goes around the field four times? | 6. **POSTER** Ted is making a stop sign poster for a talk on safety to a first grade class. He will put a strip of black paper around the perimeter of the stop sign. Each of the stop sign's eight sides is 16.34 inches. How long a strip of paper will he need? |
| 7. **FLAG** Jo is making a triangular banner. Each of the three sides is 14.567 inches long. If she puts a braided trim around the banner, how much trim will she need? | 8. **PYRAMIDS** The Great Pyramid at Giza, Egypt, has a square base, with each side measuring 0.229 kilometer. If you could walk once all the way around the pyramid at its base, how far could you walk? |

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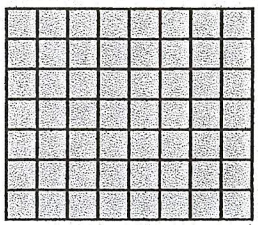
# 1-8 Study Guide and Intervention

## *Geometry: Area of Rectangles*

The **area** of a figure is the number of square units needed to cover a surface. You can use a formula to find the area of a rectangle. The formula for finding the area of a rectangle is $A = \ell \times w$. In this formula, $A$ represents area, $\ell$ represents the length of the rectangle, and $w$ represents the width of the rectangle.

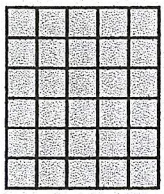
**EXAMPLE 1** **Find the area of a rectangle with length 8 feet and width 7 feet.**

$A = \ell \times w$ Area of a rectangle
$A = 8 \times 7$ Replace $\ell$ with 8 and $w$ with 7.
$A = 56$
The area is 56 square feet.



**EXAMPLE 2** **Find the area of a rectangle with width 5 inches and length 6 inches.**

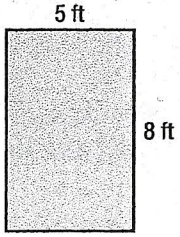
$A = \ell \times w$ Area of a rectangle
$A = 6 \times 5$ Replace $\ell$ with 6 and $w$ with 5.
$A = 30$
The area is 30 square inches.

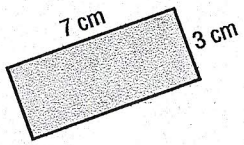


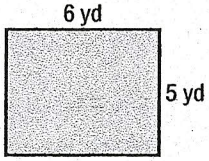
**EXERCISES**

**Find the area of each rectangle.**

1. 

2. 


3. 


4. 


5. What is the area of a rectangle with a length of 10 meters and a width of 7 meters?

6. What is the area of a rectangle with a length of 35 inches and a width of 15 inches?

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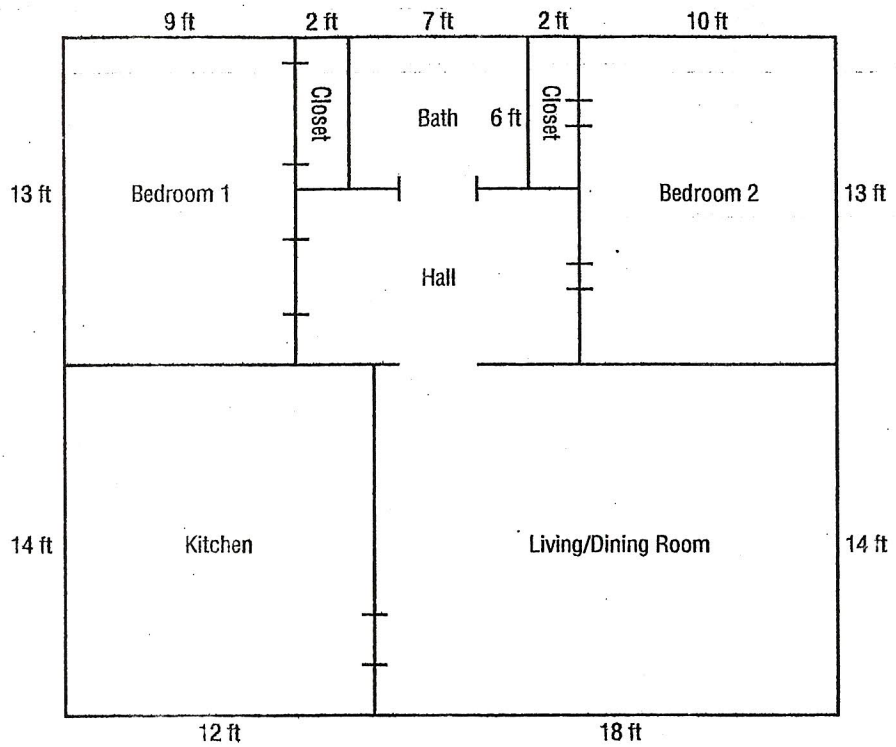
# 1-8 Practice: Word Problems

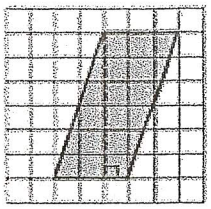
## *Geometry: Area of Rectangles*

**FLOOR PLANS For Exercises 1–6, use the diagram that shows the floor plan for a house.**




| | |
|---|---|
| **1.** What is the area of the floor in the kitchen? | **2.** Find the area of the living/dining room. |
| **3.** What is the area of the bathroom? | **4.** Find the area of Bedroom 1. |
| **5.** Which two parts of the house have the same area? | **6.** How much larger is Bedroom 2 than Bedroom 1? |

**Example 1 Find Areas of Parallelograms**
**Find the area of the parallelogram.**

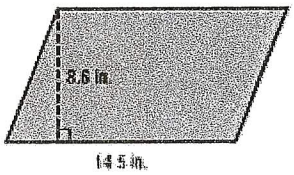


← The base is 3 units, and the height is 6 units.

$A = bh$
$A = 3 \cdot 6$
$A = 18$

The area is 18 square units or 18 units$^2$.

**Example 2 Find Areas of Parallelograms**
**Find the area of the parallelogram.**




$A = bh$
$A = 14.5 \times 8.6$
$A = 124.7$

The area is 124.7 square inches or 124.7 in$^2$.

**Example 3 Use Area to Solve a Problem**
**FLAGS An amusement park is designing a new flag for its entrance. The new flag is in the shape of a parallelogram with a base of $8\frac{3}{4}$ feet and a height of $5\frac{1}{2}$ feet. What is the area of the new flag?**

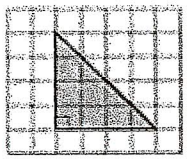
Since the flag is a parallelogram, use the formula $A = bh$.

| | |
|---|---|
| $A = bh$ | Area of a parallelogram |
| $A = \left(8\frac{3}{4}\right)\left(5\frac{1}{2}\right)$ | Replace $b$ with $8\frac{3}{4}$ and $h$ with $5\frac{1}{2}$. |
| $A = \left(\frac{35}{4}\right)\left(\frac{11}{2}\right)$ | Write the mixed numbers as improper fractions. |
| $A = \frac{385}{8}$ or $48\frac{1}{8}$ | Multiply. Then simplify. |

The area of the new flag is $48\frac{1}{8}$ square feet.

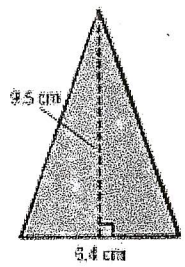
Lesson 14-2

**Example 1 Find the Area of a Triangle**
**Find the area of the triangle.**



| | |
|---|---|
| $A = \frac{1}{2}bh$ | Area of a triangle |
| $A = \frac{1}{2}(4)(4)$ | Replace $b$ with 4 and $h$ with 4. |
| $A = \frac{1}{2}(16)$ | Multiply. $4 \times 4 = 16$ |
| $A = 8$ | The area of the triangle is 8 square units. |

**Example 2 Find the Area of a Triangle**
**Find the area of the triangle.**



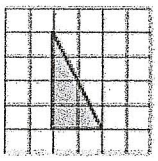

| | |
|---|---|
| $A = \frac{1}{2}bh$ | Area of a triangle |
| $A = \frac{1}{2}(6.4)(9.5)$ | Replace $b$ with 6.4 and $h$ with 9.5. |
| $A = \frac{1}{2}(60.8) = 30.4$ | Use a calculator. |

The area of the triangle is 30.4 square centimeters.

**Example 3 Use Area to Solve a Problem**

**MULTIPLE-CHOICE TEST ITEM**

Which ratio compares the area of the shaded triangle to the area of the large square?



A 1 to 2 B 1 to 4 C 1 to 9 D 1 to 16

**Read the Test Item**

You need to find the ratio that compares the area of the triangle to the area of the large square.

**Solve the Test Item**

First find the area of the triangle and the area of the square.

| **Area of Triangle** | **Area of Square** |
|---|---|
| $A = \frac{1}{2}bh$ | $A = s^2$ |
| $A = \frac{1}{2}(2)(4)$ or 4 units$^2$ | $A = 6^2$ or 36 units$^2$ |

Now find the ratio. Since $\frac{\text{area of triangle}}{\text{area of square}} = \frac{4 \text{ units}^2}{36 \text{ units}^2}$, the ratio is 4 to 36, or 1 to 9 in simplified form. So, the answer is C.

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# 1-8 Practice: Skills

## *Geometry: Area of Rectangles*

**Complete each problem.**

1. Give the formula for finding the area of a rectangle.

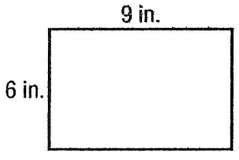
2. Draw and label a rectangle that has an area of 18 square units.

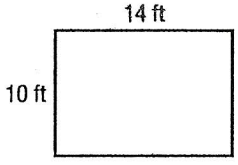
3. Give the dimensions of another rectangle that has the same area as the one in Exercise 2.

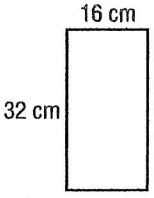
4. Find the area of a rectangle with a length of 3 miles and a width of 7 miles.

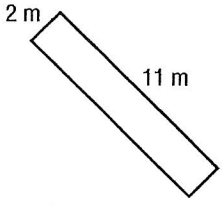
5. Find the area of a rectangle with a width of 54 centimeters and a length of 12 centimeters.

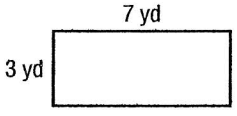
**Find the area of each rectangle.**

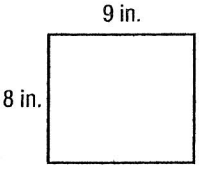
6. 

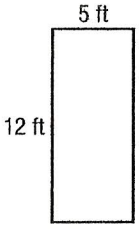

7. 

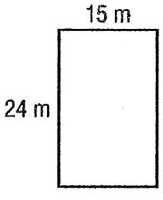

8. 

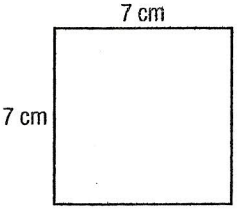

9. 


10. 


11. 


12. 


13. 


14. 

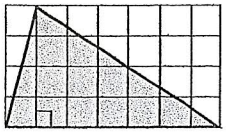

Lesson 1–8

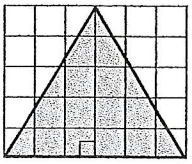
NAME _____ DATE _____ PERIOD ____

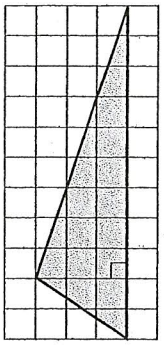
# 14-2 Practice: Skills

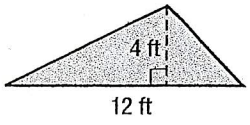
## *Area of Triangles*

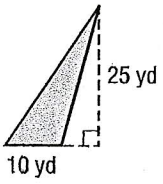
**Find the area of each triangle. Round to the nearest tenth if necessary.**

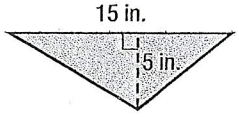
**1.** 

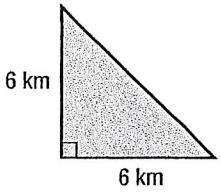
**2.** 

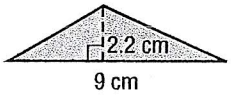
**3.** 

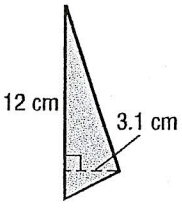
**4.** 

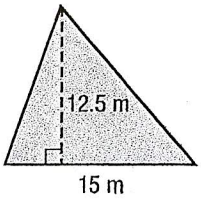

**5.** 

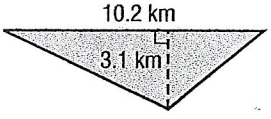

**6.** 

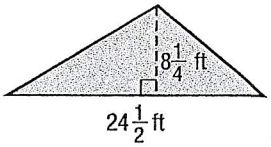

**7.** 


**8.** 


**9.** 


**10.** 


**11.** 


**12.** 


**13.** base: 4 in.
height: 11 in.

**14.** base: $4\frac{3}{4}$ yd
height: $1\frac{1}{3}$ yd

**15.** base: $5\frac{1}{4}$ ft
height: $2\frac{2}{3}$ ft

Lesson 14–2

# Sixth Grade
# Math Vocabulary
# 6.12 – Circumference and Area

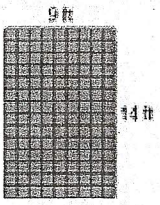
| | |
|---|---|
| 1. Chord - | A line segment with endpoints on a circle. |
| 2. Circle - | The set of points in a plane that are the same distance from a given point called the center of the circle. |
| 3. Circumference - | The distance around a circle. |
| 4. Diameter - | A line segment through the center of a circle, with endpoints on the circle. |
| 5. Radius - | A line segment with one endpoint at the center of a circle. |

# Sixth Grade
# Math Vocabulary
# S.O.L. 6.11 – Perimeter and Area

| | |
|---|---|
| 1. Area | The number of square units needed to cover a given surface. |
| 2. Parallel | Lines or Line segments that never cross and remain the same distance apart. |
| 3. Parallel Lines | Lines in a plane that do not intersect. |
| 4. Perimeter | The distance around a polygon. |
| 5. Perpendicular Lines | Lines that intersect to form 90° angles, or right angles. |

Lesson 1-8

**Example 1 Find the Area of a Rectangle**
**Find the area of a rectangle with length 14 feet and width 9 feet.**




$A = \ell \times w$ Area of a rectangle
$A = 14 \times 9$ Replace $\ell$ with 14 and $w$ with 9.
$A = 126$

The area is 126 square feet.

**Example 2 Use Area to Solve a Problem**
**BEDROOMS The Jones family is moving into a new house. The bedrooms for the two children are both rectangular in shape with the first having length 14 feet and width 10 feet and the second having length 16 feet and width 9 feet. What is the difference between the areas of the two bedrooms?**

**Area of First Bedroom**
$A = \ell \times w$ Area of a rectangle
$A = 14 \times 10$ Replace $\ell$ with 14 and $w$ with 10.
$A = 140$ Multiply.

**Area of Second Bedroom**
$A = \ell \times w$ Area of a rectangle
$A = 16 \times 9$ Replace $\ell$ with 16 and $w$ with 9.
$A = 144$ Multiply.

To find the difference, subtract.

$144 - 140 = 4$

The area of the second bedroom is 4 square feet greater than the area of the first bedroom.

Lesson 4-5

**Example 1 Find the Perimeter**
**Find the perimeter of a rectangle having length 9.6 meters and width 3.4 meters.**
**Estimate** $10 + 3 + 10 + 3 = 26$

| | |
|---|---|
| $P = 2\ell + 2w$ | Write the formula. |
| $P = 2(9.6) + 2(3.4)$ | Replace $\ell$ with 9.6 and $w$ with 3.4. |
| $P = 19.2 + 6.8$ | Multiply. |
| $P = 26.0$ | Add. |

The perimeter is 26 meters. Compare the estimate.

**Example 2 Find the Perimeter of a Square**
**CARPET The Brown family is having new carpet installed in their family room. The room is a square that measures 18 feet on each side. What is the perimeter of the family room?**

| | |
|---|---|
| **Words** | Perimeter of a square is equal to four times the measure of any side. |
| **Variables** | $P = 4s$ |
| **Equation** | $P = 4(18)$ |

| | |
|---|---|
| $P = 4(18)$ | Write the equation. |
| $P = 72$ | Multiply. |

The perimeter of the room is 72 feet.