

Name _____ Date _____

Points, Lines, and Line Segments

Use words and symbols to name each figure.

Example

$\overset{\cdot}{C}$

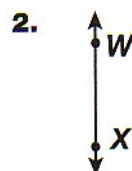
Say: **point C**

Write: **C**



Say: _____

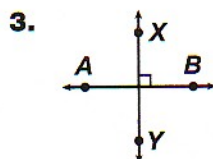
Write: _____

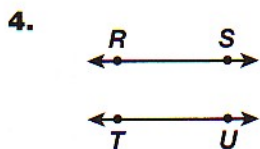


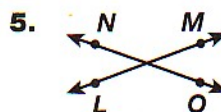
Say: _____

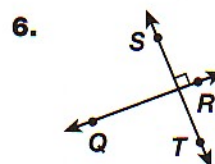
Write: _____

Write *parallel*, *intersecting* or *perpendicular* to describe the relationship between each pair of lines.









Draw an example of each.

7. Line XY

8. Vertical line segment AB

9. Point Y

Problem Solving • Reasoning

10. Find and print two letters from the alphabet that contain perpendicular lines.

11. **Write About It** Name something that you see on your way to school or in your school building that shows intersecting lines.

Name _____ Date _____

Rays and Angles

Name each angle in three ways. Then write whether each angle appears to be *acute*, *obtuse*, or *right*.

Example

$\angle R$
 $\angle QRS$
 $\angle SRQ$
 obtuse

1.

2.

3.

4.

5.

6.

7.

Problem Solving • Reasoning

8. Dan drew an angle with a vertex labeled *R*. The sides were labeled *T* and *P*. The angle was obtuse. Draw an angle that might look like the angle Dan drew.

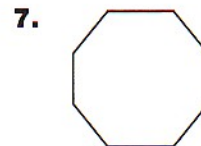
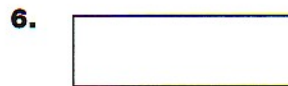
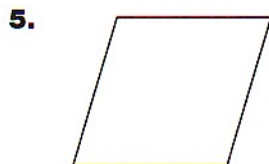
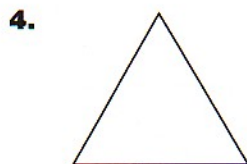
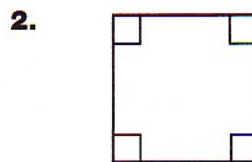
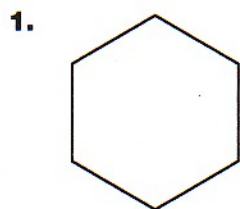
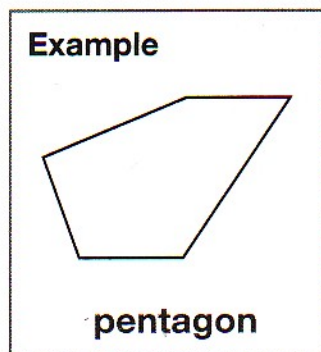
9. Keesha drew a right angle. She labeled the vertex *N*. She labeled the sides *W* and *D*. Draw an angle that looks like the angle Keesha drew.

Name _____

Date _____

Polygons and Quadrilaterals

Name each polygon. If the polygon is a quadrilateral, write all names that apply.



Problem-Solving • Reasoning

8. Describe the difference between a rhombus and a parallelogram.


9. Describe the difference between a trapezoid and a rhombus.

Name _____ Date _____

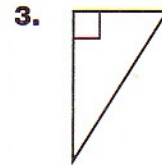
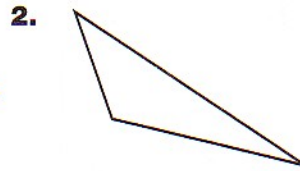
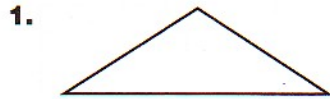
Classify Triangles

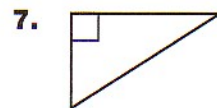
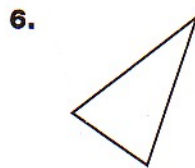
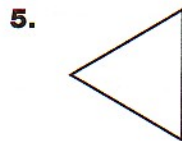
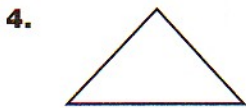
Classify each triangle as *equilateral*, *isosceles*, or *scalene* and as *right*, *obtuse*, or *acute*.

Example



scalene right





Problem Solving • Reasoning

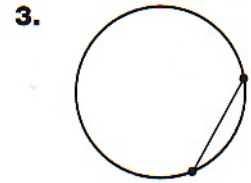
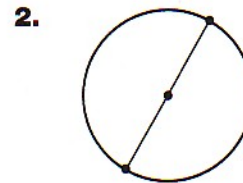
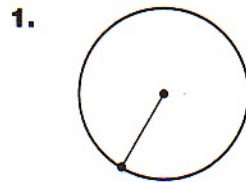
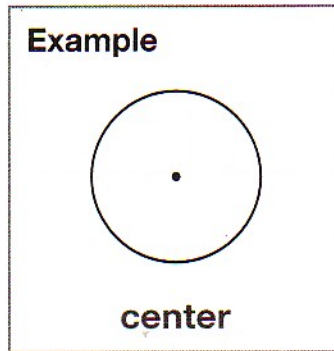
8. Chris drew a triangle in art class. Each side of her triangle was 3 inches long. Was her triangle scalene, equilateral, or isosceles?

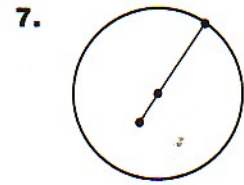
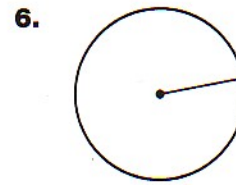
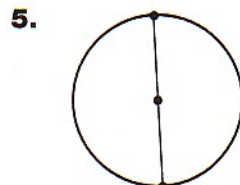
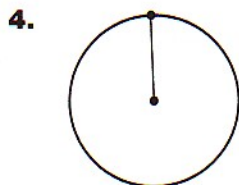
9. Nicole wants to draw a right triangle. One side has to be a right angle. What kind of angle can the other angles not be?

Name _____ Date _____

Circles

Name the part of each circle shown by the line segment. Write *center*, *radius*, *diameter*, or *none of these*.





Problem Solving • Reasoning

8. Ron draws a circle that has a diameter of 32 inches. What is the measurement of the radius of Ron's circle?

9. Is the minute hand on a clock more like a diameter or a radius?

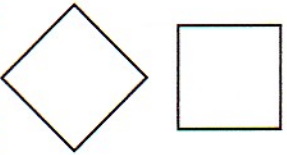
Name _____

Date _____

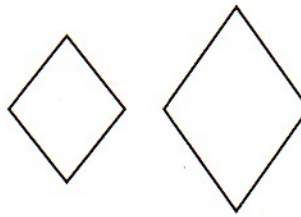
Congruent Figures

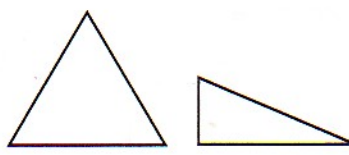
Do the figures in each pair appear to be congruent?

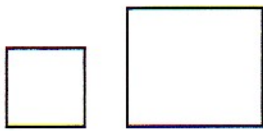
Example

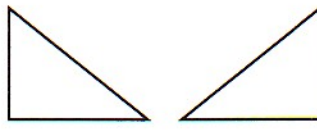


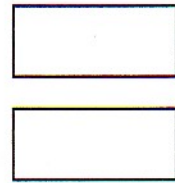
yes

1. 

2. 

3. 

4. 

5. 

Problem Solving • Reasoning

6. Two triangles have perimeters of 12 inches. Are the triangles congruent? Write yes, no, or maybe. Explain your thinking.

7. Two squares each have a perimeter of 12 inches. Are the squares congruent? Write yes, no, or maybe. Explain your thinking.

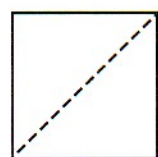
Name _____

Date _____

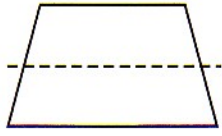
Symmetry

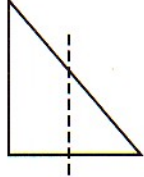
Is the dashed line a line of symmetry? Write *yes* or *no*.

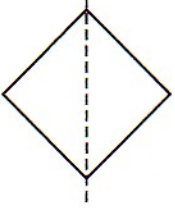
Example




yes


1. 

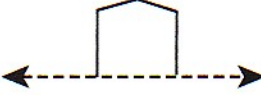
2. 

3. 

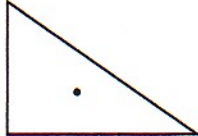
Trace each figure on grid paper. Draw the line of symmetry. Draw the other half of the figure on your grid paper.

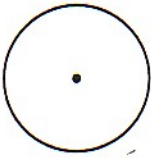
4. 

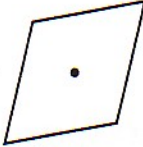
5. 

6. 

Trace each figure. Does the figure have rotational symmetry? Write *yes* or *no*.

7. 

8. 

9. 

Problem Solving • Reasoning

10. Print three letters from the alphabet that have a line of symmetry. Show the line of symmetry for each letter.

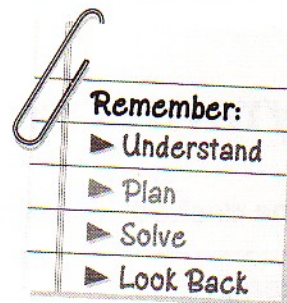
11. Does a circle always have rotational symmetry?

Copyright © Houghton Mifflin Company. All rights reserved.

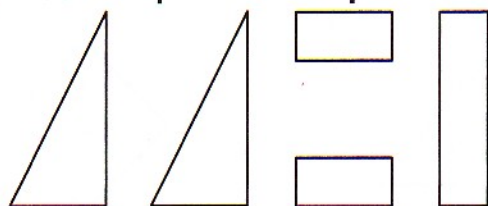
Name _____

Date _____

Problem-Solving Strategy: Use Models to Act It Out



Use these shapes to solve problems 1-4.



1. Use all of the shapes to make a square.

2. Use two of the shapes to make a rectangle.

Think: How can I arrange or turn the pieces?

Think: How can I arrange or turn the pieces?

3. Use three of the shapes to make a rectangle.

4. Use four of the shapes to make a different quadrilateral.

Choose a Strategy

Solve. Use these or other strategies.

Problem-Solving Strategies

- Draw a Picture
- Make a Table
- Use a Model
- Work Backward

5. Draw a picture to show how two three-sided shapes could be put together to form a four-sided shape.

6. Draw a picture to show how a three-sided shape and a four-sided shape could be put together to form a four-sided shape.

Name _____ Date _____

Modeling Perimeter and Area

Use grid paper to draw the figures described in each problem. Then find the perimeter and area and record your answers in the table.

Example

Square A: length of sides: 5 units
The perimeter is 20 units.
The area is 25 units.

Shape	Perimeter	Area
Square A	20 units	25 square units
Square B		
Rectangle A		
Square C		
Rectangle B		

- Square B:
length of sides: 3 units
- Rectangle A:
length of sides: 1 unit, 2 units
- Square C:
length of sides: 9 units
- Rectangle B:
length of sides: 16 units, 2 units

Problem Solving • Reasoning

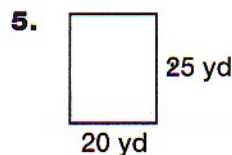
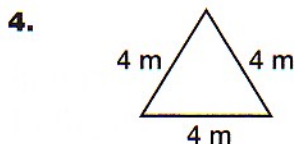
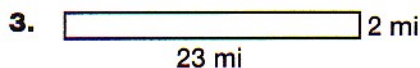
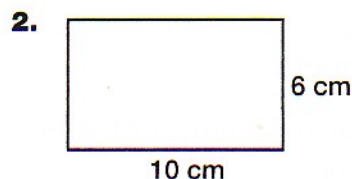
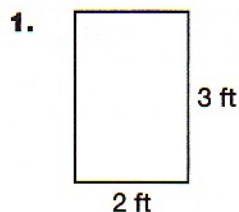
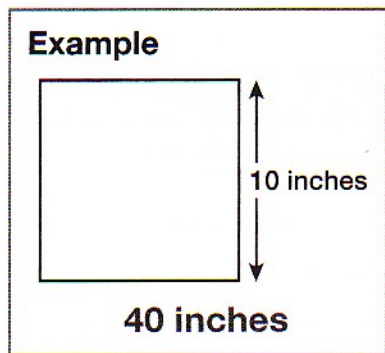
- A square and a rectangle have the same area. Will they always have the same perimeter? Show an example.

- A square and a rectangle have the same perimeter. Will they always have the same area? Show an example.

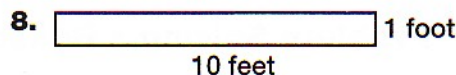
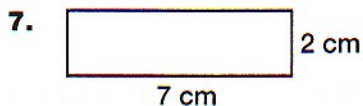
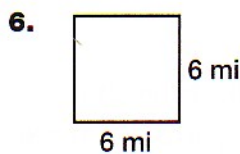
Name _____ Date _____

Use Formulas for Perimeter and Area

Find the perimeter of each polygon.



Find the area of each polygon.



Problem Solving • Reasoning

9. Erin drew a rectangle that had a perimeter of 34 centimeters. The length of the rectangle was 15 centimeters. What was the width of Erin's rectangle?

10. Ellen drew a square with an area of 25 square inches. What was the length of the sides of her square?

Name _____ Date _____

Perimeter and Area of Complex Figures

Find the perimeter and area of each figure.

Example

$P = 18 \text{ m}$
 $A = 17 \text{ sq meters}$

1.

2.

3.

4.

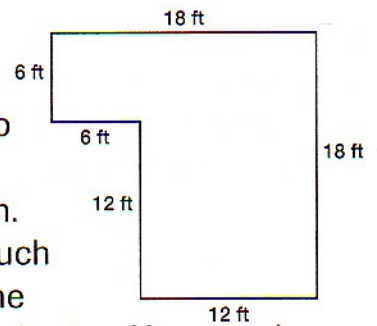
5.

Problem Solving • Reasoning

Use the figure at the right for problems 6 and 7.

6. Marcus wants to buy carpet for the room shown in the figure. How can he find out how many square feet of carpet he needs, and how many does he need?

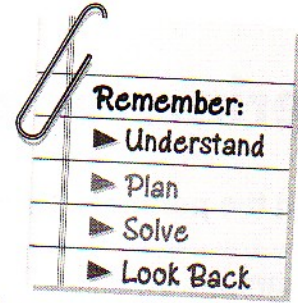
7. Marcus needs to run stereo wire around the room. To know how much wire he needs, he must find the perimeter. How can he find the perimeter, and what is it?



Name _____

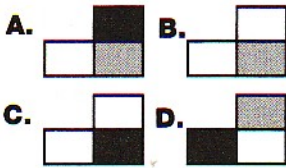
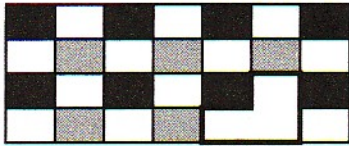
Date _____

Problem-Solving Skill: Analyze Visual Problems



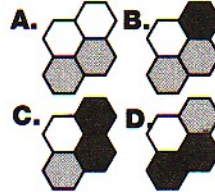
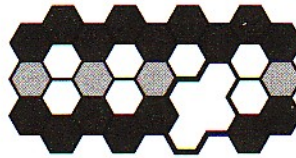
Choose the correct letter for the missing piece.

1.



Think: Look at the columns to find the pattern.

2.



Think: Look at the rows to find the pattern.

Solve. Use these or other strategies.

Problem-Solving Strategies

- Use Logical Thinking
- Find a Pattern
- Act it Out
- Draw a Picture

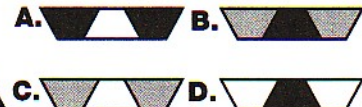
3. **Analyze** A floor tile design has a pattern in which 4 out of every 9 tiles is white. In all, there are 81 tiles. How many tiles are white?

4. What is the next shape in the pattern likely to be?



Choose the correct letter for the missing piece.

5. _____

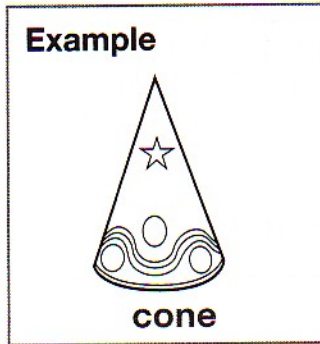


Name _____

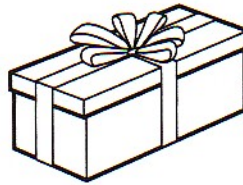
Date _____

Solid Figures and Nets

Name the solid figure each object looks like.



1.



2.

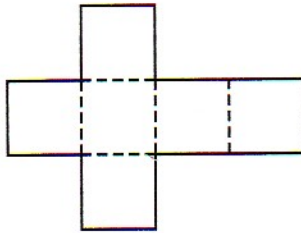


3.

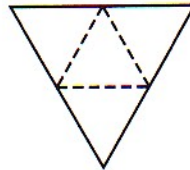


Name the solid figure that can be made with each net.

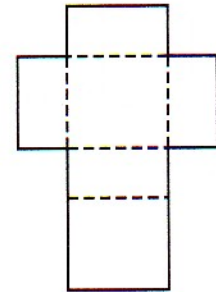
4.



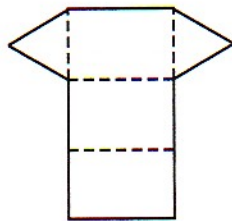
5.



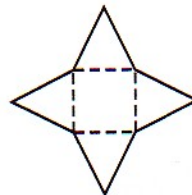
6.



7.



8.



Problem Solving • Reasoning

9. **Write About It** Describe 3 objects that look like rectangular prisms.

10. **Analyze** A sphere can be rolled in any direction. A cylinder can be rolled in a straight line. How can a cone be rolled?

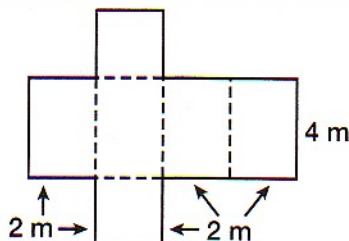
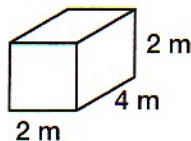
Name _____

Date _____

Surface Area

Use the net to find the surface area of each solid figure.

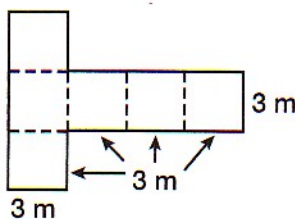
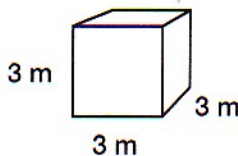
Example



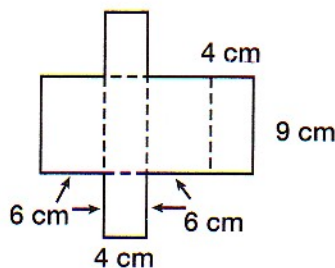
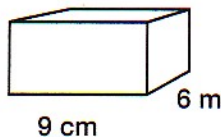
$$8 \text{ m}^2 + 8 \text{ m}^2 + 4 \text{ m}^2 + 4 \text{ m}^2 + 8 \text{ m}^2 + 8 \text{ m}^2 = 40 \text{ m}^2$$

The area is 40 m^2 .

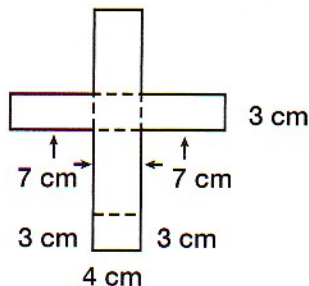
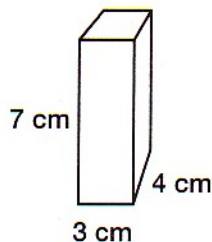
1.



2.



3.



Problem Solving • Reasoning

4. Each of the faces of a triangular pyramid has an area of 15 in.^2 . What is the surface area of the pyramid?

5. **Analyze** A rectangular box is 3 inches high, 10 inches wide, and 18 inches long. What is the surface area of the box?

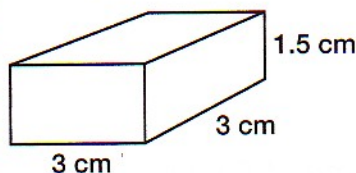
Name _____

Date _____

Volume

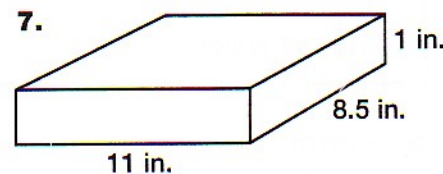
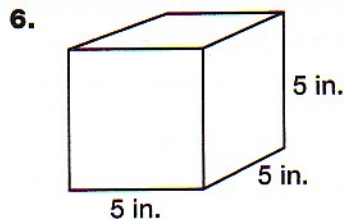
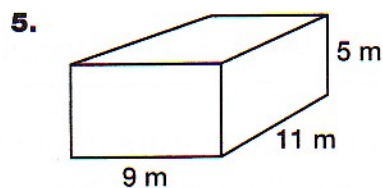
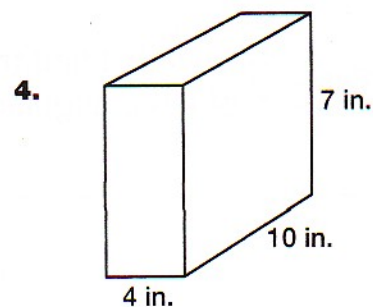
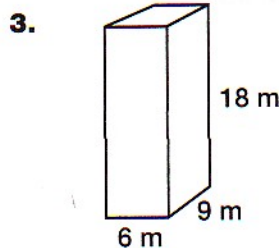
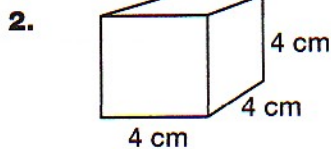
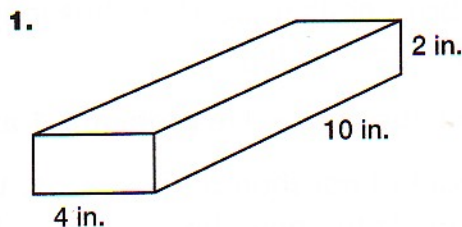
Find the volume of each figure.

Example



$$3 \times 3 \times 1.5 = 13.5$$

cubic cm



Problem Solving • Reasoning

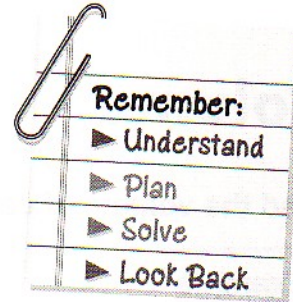
8. A sandbox has dimensions of 1 ft by 5 ft by 6 ft. How many cubic feet of sand are needed to fill the sandbox?
- _____

9. **Analyze** A tank needs to hold at least 500 ft^3 of water. The bottom of the tank will be 9 ft by 9 ft. The tank should be a whole number of feet tall. How tall should the tank be?
- _____

Name _____

Date _____

Problem-Solving Application: Using Formulas



Jeremy is making a box to send a present to his grandmother. The box needs to be 12 inches long, 10 inches wide, and 5 inches high.

Use the information above to solve problems 1 and 2.

1. To find the amount of cardboard he needs, Jeremy needs to know the surface area of the box. What is the surface area?

2. What is the volume of the box Jeremy makes?

Think: How do I find the surface area of a rectangular prism?

Think: How do I find the volume of a rectangular prism?

Use these or other strategies.

Problem-Solving Strategies

• Draw a Picture

• Write an Equation

• Use Logical Reasoning

3. Jeremy bought 4 large sheets of cardboard and 3 small sheets of cardboard. The large sheets cost \$1.17 and the small sheets cost \$0.79. How much did the cardboard cost?

4. Jeremy is going to put an extra layer of cardboard in the bottom of the box. How many square inches of cardboard does he need for the extra layer?

5. What is the surface area of a shipping box that measures 12 inches on a side?

6. What is the volume of a shipping box that measures 12 inches on a side?
