Name _____

Relating Solids and Plane Figures

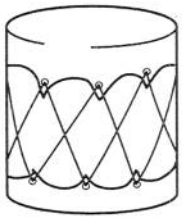
P 8-1

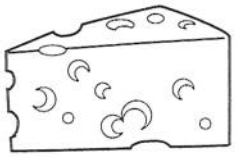
Complete the table.

Solid Figure	Number of Faces	Number of Edges	Number of Vertices
1. Square Pyramid			
2. Cube			
3. Triangular Prism			

Identify the solid that best describes each object.

4.  _____

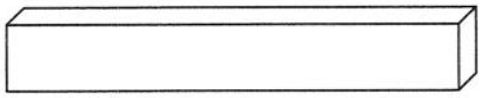
5.  _____

6.  _____

7. How many total faces does a rectangular prism have? _____

Test Prep

8. Which solid does the figure represent?



A. Rectangular pyramid

B. Cylinder

C. Rectangular prism

D. Square pyramid

9. Writing in Math Explain the difference between a plane figure and a solid figure.

_____

_____

_____

Name _____

Polygons

P 8-2

Draw an example of each polygon. How many sides and vertices does each one have?

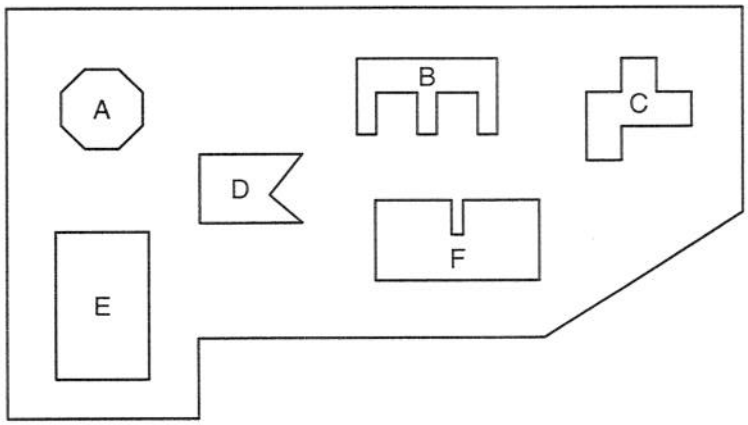
1. Square

2. Octagon

3. Hexagon

_____ _____ _____

The map shows the shapes of buildings in Polygon Park. Identify the polygons that are lettered.



4. A

_____

5. D

_____

6. C

_____

7. B

_____

8. E

_____

9. F

_____

Test Prep

10. Which is the point where sides meet in a polygon?

A. Edge **B.** Endpoint **C.** Side **D.** Vertex

11. **Writing in Math** Describe two polygons by the number of vertices and sides each has.

_____

Name _____

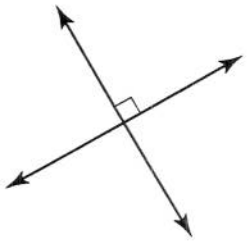
Lines, Line Segments, Rays, and Angles

P 8-3

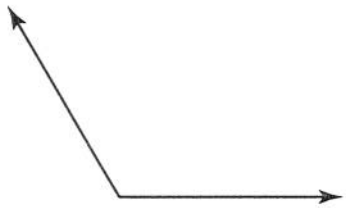
Use geometric terms to describe what is shown. Be as specific as possible.

1. 

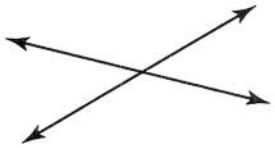
_____

2. 

_____

3. 

_____

4. 

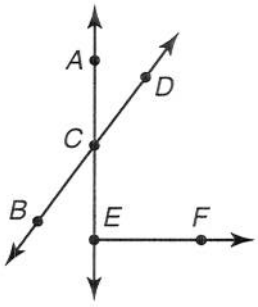
_____

5. Name two lines.

_____

6. Name two obtuse angles.

_____

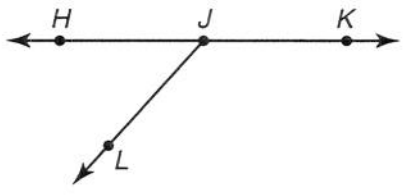


Test Prep

7. Which is the geometric term for $\angle HJK$?

   A. Acute angle **C.** Right angle

   B. Obtuse angle **D.** Straight angle



8. **Writing in Math** Describe an acute angle.

_____

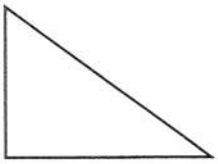
_____

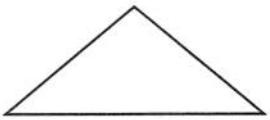
Name _____

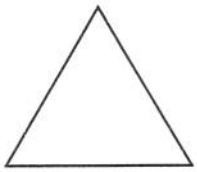
Triangles and Quadrilaterals

P 8-4

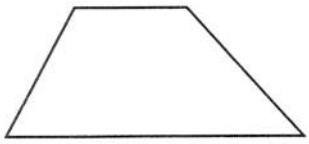
Classify each triangle by its sides and then by its angles.

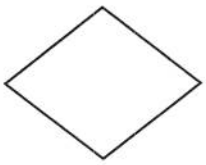
1.  _____

2.  _____

3.  _____

Write the name of each quadrilateral.

4.  _____

5.  _____

Test Prep

6. Which is a triangle with one angle of 90°?

   A. Scalene triangle

   B. Obtuse triangle

   C. Right triangle

   D. Acute triangle

7. **Writing in Math** Explain why a square can also be a rhombus but can never be a trapezoid.

_____

_____

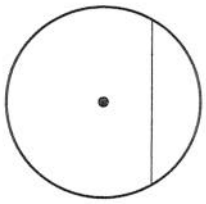
_____

Name _____

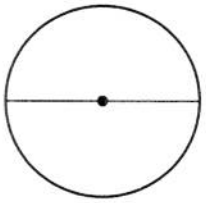
Circles

P 8-5

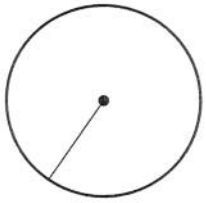
Use geometric terms to describe what is shown on each circle.

1. 

_____

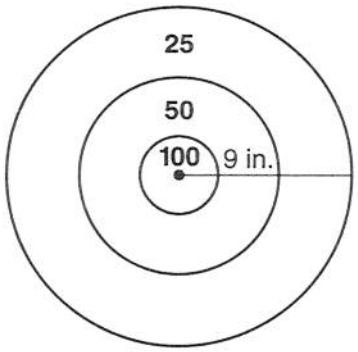
2. 

_____

3. 

_____

Find the length of the diameter of each circular object.

4. 

_____

5. 

_____

Test Prep

6. A CD has a radius of 6 cm. Which is its diameter?

A. 3 cm **B.** 12 cm **C.** 18 cm **D.** 12 in.

7. **Writing in Math** What is the relationship between the diameter and the radius of a circle?

_____

_____

_____

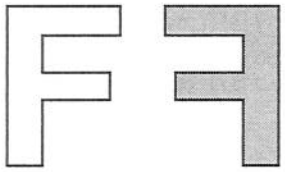
_____

Name _____

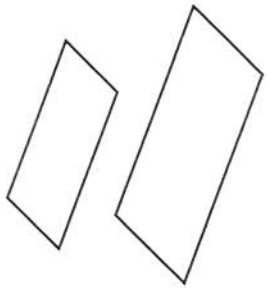
Congruent Figures and Motions

P 8-6

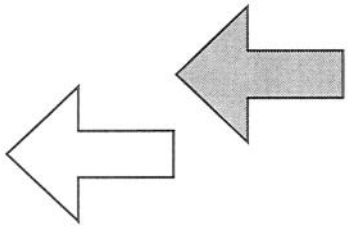
Do the figures in each pair appear to be congruent? If so, tell if they are related by a flip, slide, or turn.

1. 

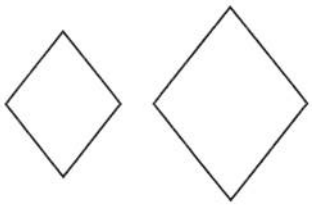
_____

2. 

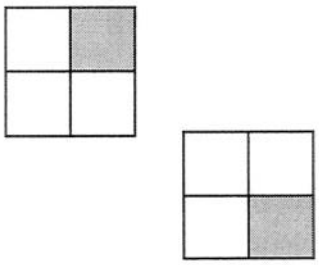
_____

3. 

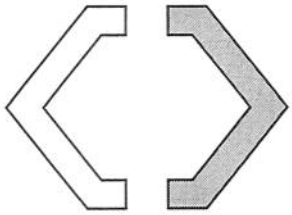
_____

4. 

_____

5. 

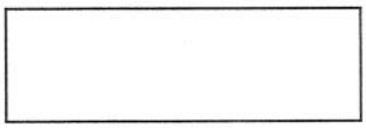
_____

6. 

_____

Test Prep

7. Which figure described could NOT be congruent to this rectangle?



A. A quadrilateral with equal sides

B. A rectangle with equal sides

C. A quadrilateral with equal angles

D. A triangle with equal sides

8. **Writing in Math** Describe how four turns can put a figure in its original position.

_____

_____

_____

_____

Name _____

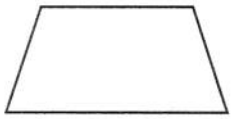
Symmetry

P 8-7

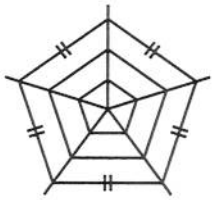
How many lines of symmetry does each figure have?

1. 

_____

2. 

_____

3. 

_____

4. 

_____

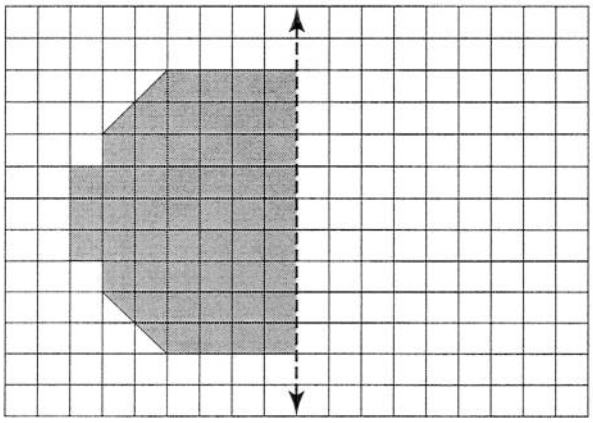
5. 

_____

6. 

_____

7. Finish the drawing to make it symmetric.



Test Prep

8. How many lines of symmetry does a rhombus have?

   A. 0 **B.** 1 **C.** 2 **D.** 3

9. **Writing in Math** Explain why a square is always symmetric.

_____

_____

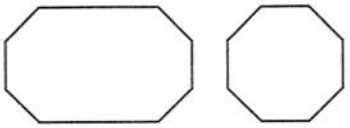
_____

Name _____

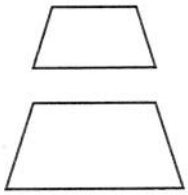
Similar Figures

P 8-8

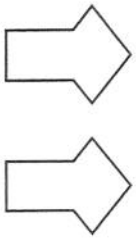
Do the figures in each pair appear to be similar? If so, are they also congruent?

1. 

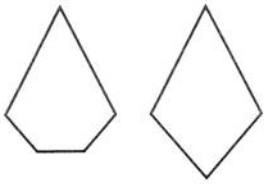
_____

2. 

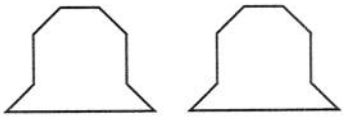
_____

3. 

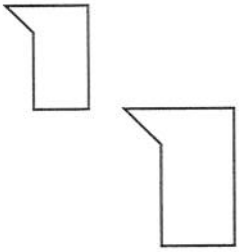
_____

4. 

_____

5. 

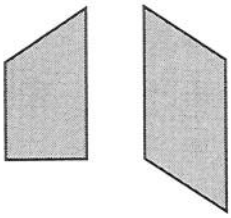
_____

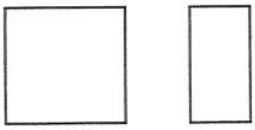
6. 

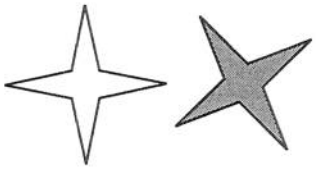
_____

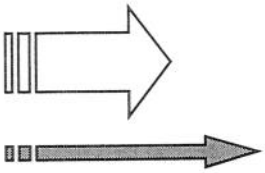
Test Prep

7. Which pair of figures is similar and congruent?

A. 

B. 

C. 

D. 

8. **Writing in Math** Explain why similar figures are not always congruent.

_____

_____

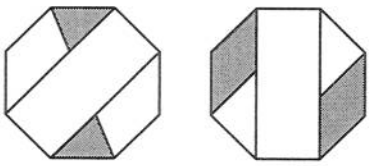
_____

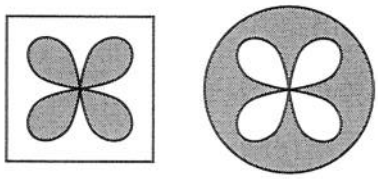
Name _____

Writing to Describe

P 8-9

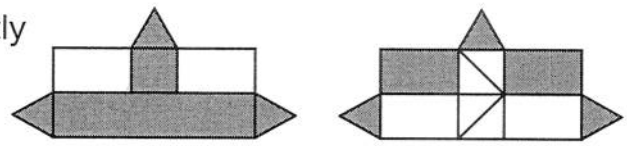
Write two statements to describe how each pair of figures are alike or different. Use geometric terms.

1. 

2. 

Test Prep

3. Which statement does NOT correctly describe the figures?



A. The figures are similar.

B. Both figures have five sections.

C. One figure has 3 triangles and the other has 7 triangles.

D. The shading of the figures is different.

4. **Writing in Math** Describe how a baseball and a basketball are alike.

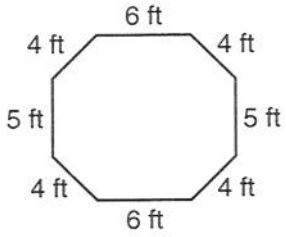
Name _____

Perimeter

P 8-10

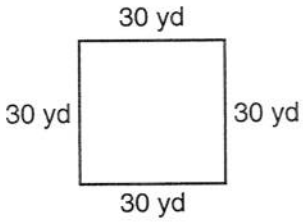
Find the perimeter of each figure.

1.



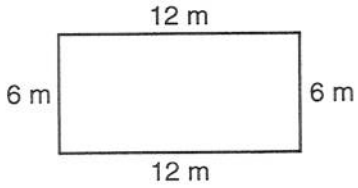
_____

2.



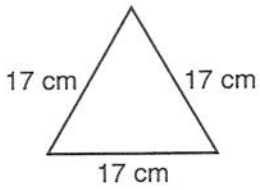
_____

3.



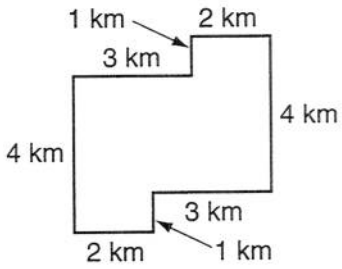
_____

4.



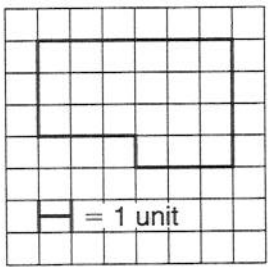
_____

5.



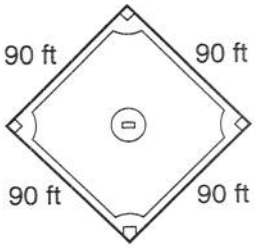
_____

6.



_____

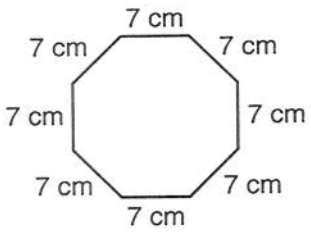
7. What is the perimeter around the bases?



_____

Test Prep

8. Which is the perimeter of this figure?



A. 77 cm **B.** 63 cm

C. 56 cm **D.** 28 cm

9. Writing in Math Explain how you can use multiplication to find the perimeter of a square.

_____

_____

_____

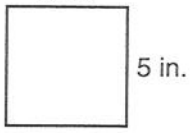
Name _____

Area

P 8-11

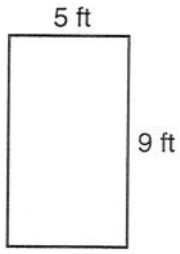
Find the area of each figure.

1.



_____

2.



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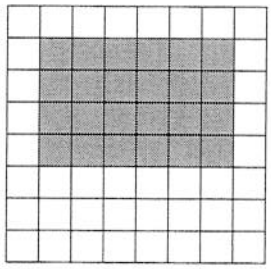
3.



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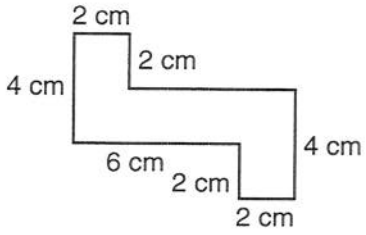

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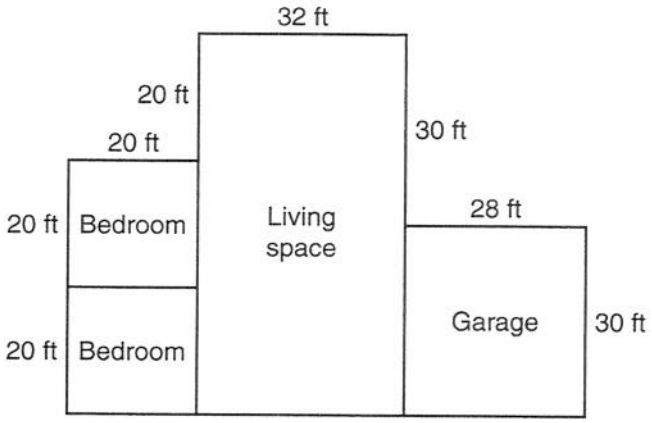
5. What is the area of both the bedrooms?

_____

6. What is the area of the whole house?

_____



Test Prep

7. Which is the area of a rectangle with a length of 26 cm and a width of 34 cm?

A. 992 cm **B.** 884 cm **C.** 720 cm **D.** 324 cm

8. **Writing in Math** Explain how you would find the length of one side of a square if the area is 16 square units.

_____

Name _____

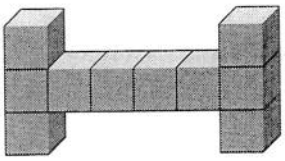
PROBLEM-SOLVING STRATEGY **P 8-12**

Act It Out

Solve each problem. Write the answer in a complete sentence.

1. The Wilsons have 12 yd of fence for their garden. What are the length and width of the garden if it has the greatest possible area?

_____

2. 

The town of Mount Harris needs to build another bridge over Franklin Creek. If the second bridge is exactly the same as the first bridge, how many cube units are needed to build the second bridge?

_____

3. Joshua wants to build a fort in his backyard. He has 10 pieces of wood that are each 6 ft long. If Joshua arranges the wood into a rectangle to make the greatest area, what is the area of the fort?

_____

4. The Community Center wants to separate the basement of their activity hall into two rooms. One room will be used for storage and the other will have space for table tennis. The entire basement is a rectangle with a length of 48 ft and a width of 12 ft. The storage room must have an area of 144 ft. What is the perimeter and area of the table tennis room?

_____

_____

_____

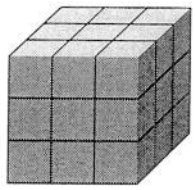
Name _____

Volume

P 8-13

Find the volume of each figure.

1.



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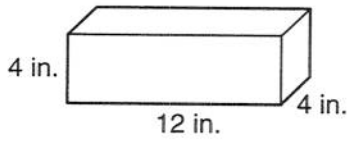

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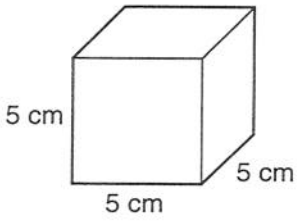

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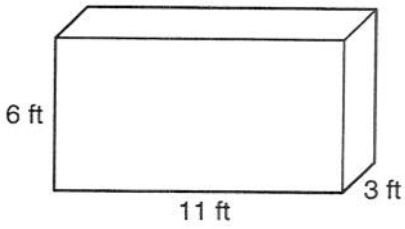


_____

5. A rectangular prism has a length of 7 cm, a width of 4 cm, and a height of 3 cm. What is the volume of the prism? _____

6. Reasoning The length of an edge of a cube is 5 ft. What is the total volume of two cubes of the same size? _____

7. If a cube has a volume of 64 cubic units, how many bricks are in each row? _____

Test Prep

8. What is the volume of a cube that has an edge of 7 yd?

A. 343 cubic yd **B.** 98 cubic yd **C.** 49 cubic yd **D.** 21 cubic yd

9. Writing in Math If you know that a rectangular prism has a length of 256 m and a width of 192 m, can you find its volume? Explain your answer.

_____

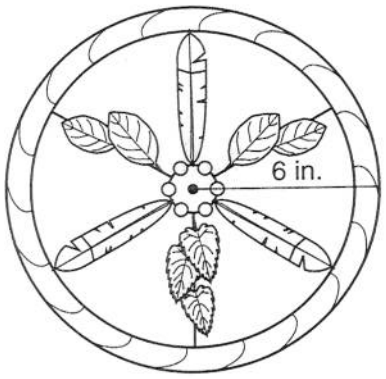
_____

Name _____

PROBLEM-SOLVING APPLICATION **P 8-14**

Native American Math

1. Some Native American tribes used to play a game of skill in which players had to throw a lance through the center of a rolling hoop. What is the diameter of the hoop?



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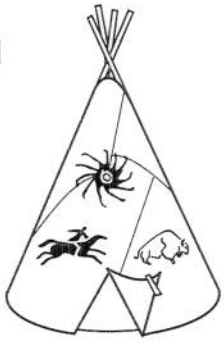
2. The Plains tribe lived in tepees. What solid figure best describes a tepee?



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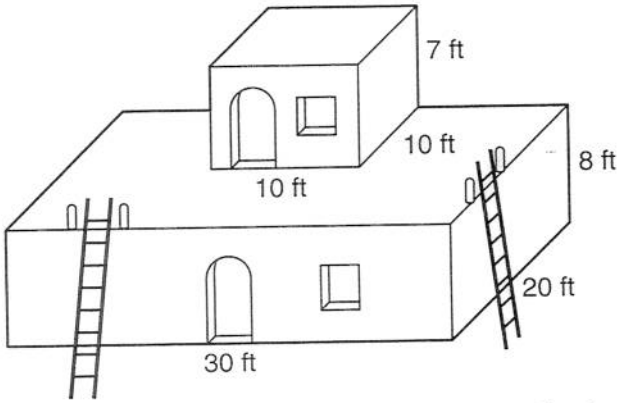

The Pueblo tribe lived in homes called pueblos. These houses were made of mud and brick and were built on top of each other like modern apartment buildings. People used ladders to get to the different levels. What is the total volume of the house and its upper room?

_____

4. To build an igloo, the Inuit of northern Canada use blocks of hard packed snow. If someone asked you to make a rectangular prism 7 blocks long, 5 blocks wide, and 4 blocks high, how many blocks would you need?

_____