

Name \_\_\_\_\_

# Basic Geometric Ideas

Use the diagram at the right. Name the following.

1. three points

\_\_\_\_\_

2. a ray

\_\_\_\_\_

3. two intersecting lines but not perpendicular

\_\_\_\_\_

4. two parallel lines

\_\_\_\_\_

5. a line segment

\_\_\_\_\_

6. two perpendicular lines

\_\_\_\_\_

7. **Explain It** Can a line segment have two midpoints? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. Which type of lines are shown by the figure?

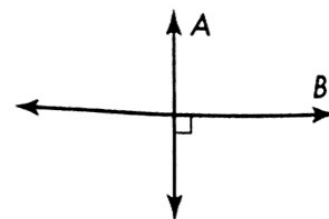
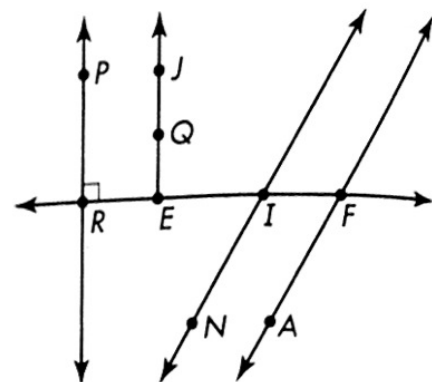
**A** Congruent

**C** Perpendicular

**B** Parallel

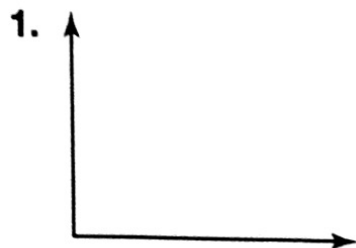
**D** Curved

9. **Draw a picture** Draw and label two perpendicular line segments  $\overline{KL}$  and  $\overline{MN}$ .

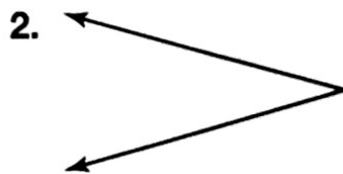


# Measuring and Classifying Angles

Classify each angle as *acute*, *right*, *obtuse*, or *straight*. Then measure each angle. (Hint: Draw longer sides if necessary.)



\_\_\_\_\_



\_\_\_\_\_

Draw an angle with each measure.

3.  $120^\circ$

4.  $180^\circ$

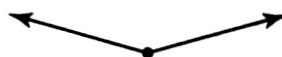
5. Draw an acute angle. Label it with the letters *A*, *B*, and *C*. What is the measure of the angle?

\_\_\_\_\_

6. Which kind of angle is shown in the figure below?

A Acute

C Obtuse



B Right

D Straight

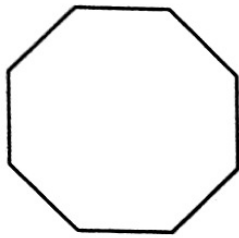
7. **Explain It** Explain how to use a protractor to measure an angle.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Polygons

Name each polygon. Then tell if it appears to be a regular polygon.

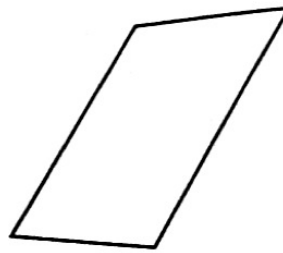
1.



\_\_\_\_\_

\_\_\_\_\_

2.



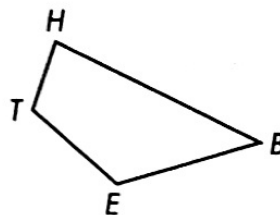
\_\_\_\_\_

\_\_\_\_\_

3. Name the polygon. Name the vertices.

\_\_\_\_\_

\_\_\_\_\_



4. Which polygon has eight sides?

- A** quadrilateral      **B** pentagon      **C** hexagon      **D** octagon

5. **Explain It** Draw two regular polygons and two that are irregular. Use geometric terms to describe one characteristic of each type.

\_\_\_\_\_

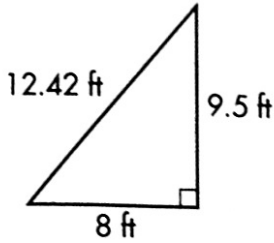
\_\_\_\_\_

\_\_\_\_\_

# Triangles

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

1.

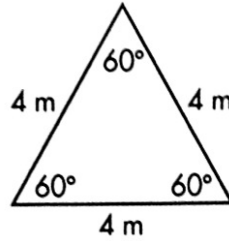



---



---

2.




---



---

The measures of two angles of a triangle are given. Find the measure of the third angle.

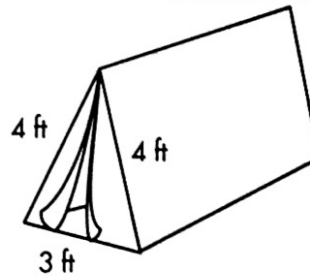
3.  $47^\circ, 62^\circ, \underline{\hspace{2cm}}$

4.  $29^\circ, 90^\circ, \underline{\hspace{2cm}}$

5.  $75^\circ, 75^\circ, \underline{\hspace{2cm}}$

6.  $54^\circ, 36^\circ, \underline{\hspace{2cm}}$

7. Judy bought a new tent for a camping trip. Look at the side of the tent with the opening to classify the triangle by its sides and its angles.




---

8. **Reasonableness** Which describes a scalene triangle?

- A** 4 equal sides    **B** 3 equal sides    **C** 2 equal sides    **D** 0 equal sides

9. **Explain It** The lengths of two sides of a triangle are 15 in. each. The third side measures 10 in. What type of triangle is this? Explain your answer using geometric terms.

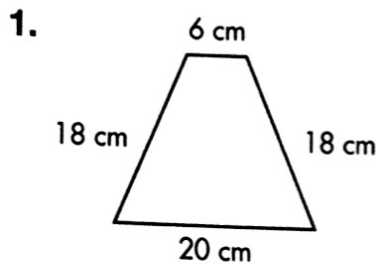
---



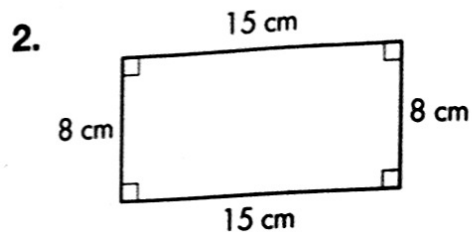
---

# Quadrilaterals

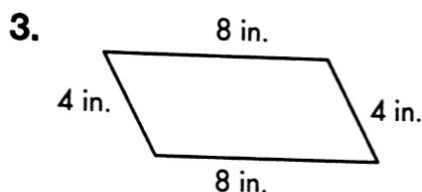
Classify each quadrilateral. Be as specific as possible.



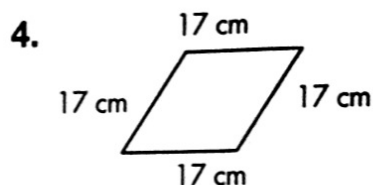
\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

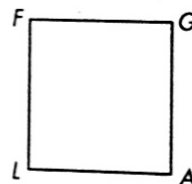
For 5 and 6, the measures of three angles of a quadrilateral are given. Find the measure of the fourth angle.

5.  $90^\circ, 145^\circ, 78^\circ, \underline{\hspace{2cm}}$

6.  $110^\circ, 54^\circ, 100^\circ, \underline{\hspace{2cm}}$

7. Name the vertices of the square to the right.

\_\_\_\_\_



8. Three of the angles of a quadrilateral measure  $80^\circ, 100^\circ,$  and  $55^\circ$ . Which is the measure of the fourth angle?

A  $115^\circ$

B  $120^\circ$

C  $125^\circ$

D  $130^\circ$

9. **Explain It** Can a trapezoid have four obtuse angles? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Problem Solving: Make and Test Generalizations

In 1 through 6, test the generalization and state whether it appears to be correct or incorrect. If incorrect, give an example to support why.

1. All triangles have right angles.

---

2. All rectangles have right angles.

---

3. Any two triangles can be joined to make a rhombus.

---

4. All rectangles can be cut in half vertically or horizontally to make two congruent rectangles.

---

5. Intersecting lines are also parallel.

---

6. How many whole numbers have exactly three digits? Hint: 999 is the greatest whole number with three digits.

A 890      B 900      C 990      D 999

7. **Explain It** How can you show that a generalization is correct?

---

---