

Dear Family,

Throughout the next few weeks, our math class will be studying two-dimensional figures. The students will use definitions to identify and describe characteristics of these figures.

You can expect to see homework that includes identifying types of triangles and quadrilaterals.

Here is a sample of how your child will be taught to classify a triangle by its angles.

## Vocabulary

**acute triangle** A triangle with three acute angles

**line segment** A part of a line that includes two points, called endpoints, and all the points between them

**obtuse triangle** A triangle with one obtuse angle

**ray** A part of a line, with one endpoint, that is straight and continues in one direction

**right triangle** A triangle with one right angle and two acute angles



### MODEL Classify a triangle by the sizes of its angles.

Classify triangle  $KLM$ .

#### STEP 1

Determine how many angles are acute.

$\angle K$  is acute.

$\angle L$  is acute.

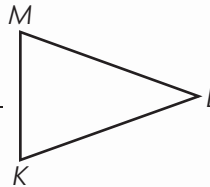
$\angle M$  is acute.

#### STEP 2

Determine the correct classification.

A triangle with 3 acute angles is

acute.



### Tips

#### Angle sizes

Angles are classified by the size of the opening between the rays. A right angle forms a square corner. An acute angle is less than a right angle. An obtuse angle is greater than a right angle and less than a straight angle.

To classify angles in a figure, use the corner of an index card as a right angle and compare.

## Activity

Help your child commit most of the classifications of triangles and quadrilaterals to memory. Together, you can make a series of flash cards with the classifications on one side of the card and definitions and/or sketches of examples on the other side of the card.

# Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas estudiaremos las figuras bidimensionales. Usaremos las definiciones para identificar y describir las características de esas figuras.

Llevaré a la casa tareas con actividades para identificar diferentes tipos de triángulos y cuadriláteros.

Este es un ejemplo de la manera como aprenderemos a clasificar un triángulo por sus ángulos.

## Vocabulario

**triángulo agudo** Un triángulo que tiene tres ángulos agudos

**segmento de recta** Una parte de una línea que incluye dos puntos, llamados extremos, y los puntos que están entre ellos

**triángulo obtuso** Un triángulo que tiene un ángulo obtuso

**rayo** Parte de una línea recta, con un extremo y que continúa en una dirección

**triángulo rectángulo** Un triángulo con un ángulo recto y dos ángulos agudos

## MODELO Clasificar un triángulo por el tamaño de sus lados

Clasifica el triángulo  $KLM$ .

### PASO 1

Identifica cuántos ángulos son agudos.

$\angle K$  es agudo.

$\angle L$  es agudo.

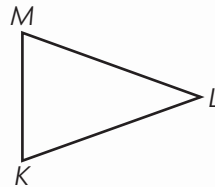
$\angle M$  es agudo.

### PASO 2

Determina la clasificación correcta.

Un triángulo con 3 ángulos agudos, entonces es

acutángulo.



### Pistas

#### Tipos de ángulos

Los ángulos se clasifican según el tamaño de la abertura entre sus rayos. Un ángulo recto forma una esquina recta. Un ángulo agudo mide menos que un ángulo recto. Un ángulo obtuso mide más que un ángulo recto y menos que un ángulo llano.

Para clasificar los ángulos de una figura, usa la esquina de una tarjeta como modelo de ángulo recto y compara.

## Actividad

Anime a su hijo a memorizar las clasificaciones de los triángulos y los cuadriláteros. Puede hacer tarjetas nemotécnicas con las clasificaciones en un lado y las definiciones y/o ejemplos visuales en el otro lado de cada tarjeta.

Name \_\_\_\_\_

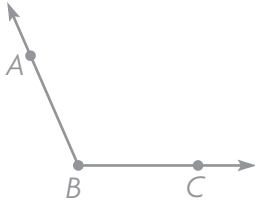
# Lines, Rays, and Angles



**COMMON CORE STANDARD—4.G.1**  
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Draw and label an example of the figure.

1. obtuse  $\angle ABC$



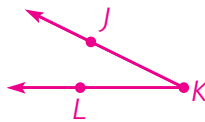
**Possible drawings are shown.**

**Think:** An obtuse angle is greater than a right angle. The middle letter, B, names the vertex of the angle.

2.  $\overrightarrow{GH}$



3. acute  $\angle JKL$



4.  $\overline{BC}$



Use the figure for 5–8.

**Possible answers are given.**

5. Name a line segment.

                   $\overline{EF}$                   

6. Name a right angle.

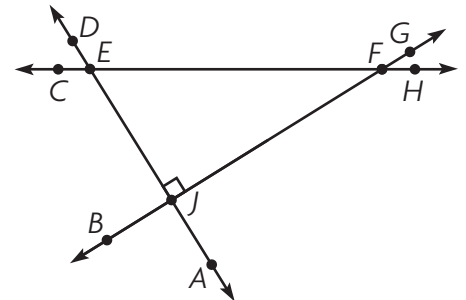
                   $\angle EJF$                   

7. Name an obtuse angle.

                   $\angle CEJ$                   

8. Name a ray.

                   $\overrightarrow{JD}$                   



## Problem Solving Real World

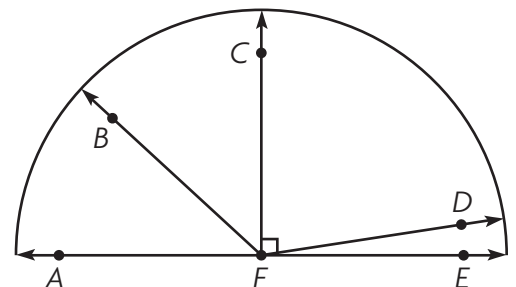
Use the figure at the right for 9–11.

9. Classify  $\angle AFD$ .                   **obtuse**

10. Classify  $\angle CFE$ .                   **right**

11. Name two acute angles.

                  **Possible answers:  $\angle AFB$  and  $\angle DFE$**                   



## Lesson Check (4.G.1)

1. The hands of a clock show the time 12:25.



What kind of angle exists between the hands of the clock?

**obtuse**

2. Use letters and symbols to name the figure shown below.



$\overrightarrow{AB}$

## Spiral Review (4.NF.3c, 4.NF.6, 4.NF.7, 4.MD.2)

3. Jan's pencil is 8.5 cm long. Ted's pencil is longer. Write a decimal that could represent the length of Ted's pencil?
4. Kayla buys a shirt for \$8.19. She pays with a \$10 bill. How much change should she receive?

**Possible answer: 9.0 cm**

**\$1.81**

5. Sasha donated  $\frac{9}{100}$  of her class's entire can collection for the food drive. What decimal is equivalent to  $\frac{9}{100}$ ?
6. Jose jumped  $8\frac{1}{3}$  feet. This was  $2\frac{2}{3}$  feet farther than Lila jumped. How far did Lila jump?

**0.09**

**$5\frac{2}{3}$  feet**

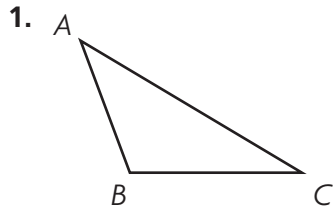
Name \_\_\_\_\_

**Classify Triangles by Angles**



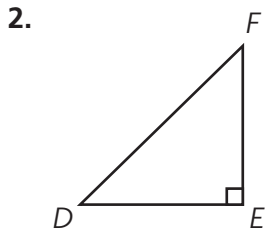
**COMMON CORE STANDARD—4.G.2**  
 Draw and identify lines and angles and classify shapes by properties of their lines and angles.

Classify each triangle. Write *acute*, *right*, or *obtuse*.

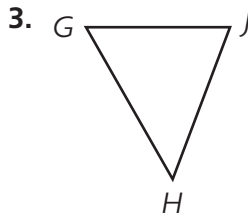


**Think:** Angles *A* and *C* are both acute.  
 Angle *B* is obtuse.

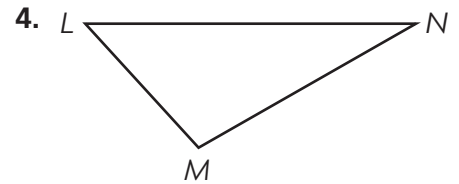
**obtuse**



**right**



**acute**



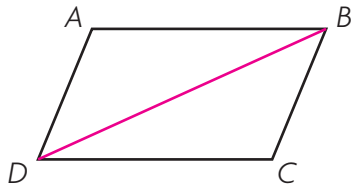
**obtuse**

**Problem Solving**



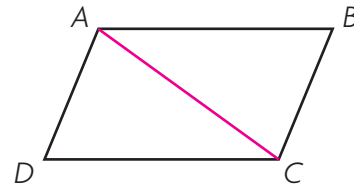
**Check students' drawings.**

5. Use figure *ABCD* below. Draw a line segment from point *B* to point *D*. Name and classify the triangles formed.



**Possible answer: triangles *ABD* and *BCD* are both obtuse triangles.**

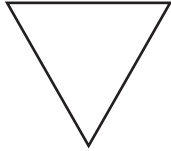
6. Use figure *ABCD* below. Draw a line segment from point *A* to point *C*. Name and classify the triangles formed.



**Possible answer: triangles *ADC* and *ABC* are both acute triangles.**

## Lesson Check (4.G.2)

1. Stephen drew this triangle. How many obtuse angles does the triangle have?



**0 obtuse angles**

2. Joan was asked to draw a right triangle. How many right angles are in a right triangle?

**1 right angle**

## Spiral Review (4.OA.4, 4.NBT.5, 4.NF.5, 4.G.1)

3. Oliver drew the figure below to show light traveling from the Sun to Earth. Name the figure he drew.



**ray SE**

4. Armon added  $\frac{1}{10}$  and  $\frac{8}{100}$ . What is the sum of these fractions?

**$\frac{18}{100}$**

5. Sam counted out loud by 6s. Jorge counted out loud by 8s. What are the first three numbers both Sam and Jorge said?

**24, 48, 72**

6. A basketball team averaged 105 points per game. How many points did the team score in 6 games?

**630 points**

Name \_\_\_\_\_

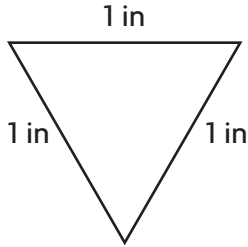
### Classify Triangles by Sides



**COMMON CORE STANDARD—4.G.2**  
Classify triangles by the lengths of their sides.

Name the triangle. Write *equilateral*, *isosceles*, or *scalene*.

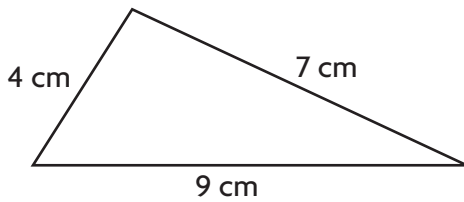
1.



**Think:** All of the sides are the same length.

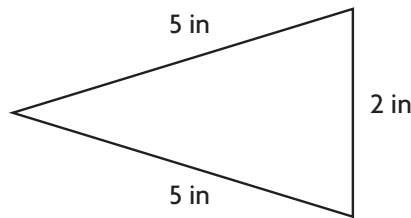
**equilateral**

2.



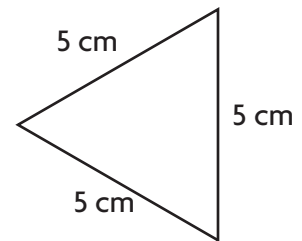
**scalene**

3.



**isosceles**

4.

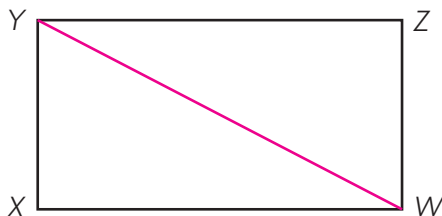


**equilateral**

### Problem Solving



5. Marcus drew a line from point *Y* to point *W* in the rectangle shown below. He created two identical triangles. Classify the triangles by size of their angles and by the lengths of their sides.



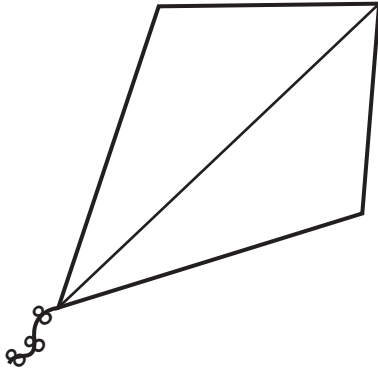
**right; scalene**

6. Is it possible to draw a triangle that is both obtuse and equilateral? Explain why or why not.

**No; Possible explanation:**  
all of the angles of  
an equilateral triangle  
are acute. So, it is not  
possible to have an  
equilateral triangle that  
has an obtuse angle.

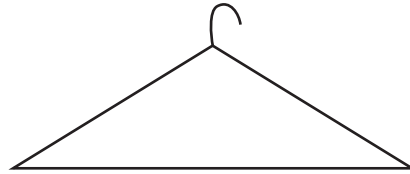
## Lesson Check (4.G.2)

1. The kite is made of two triangles. Are they isosceles, equilateral, or scalene triangles?



**scalene**

2. The hanger has the shape of a triangle. Is the triangle isosceles, equilateral, or scalene?



**isosceles**

## Spiral Review (4.OA.1, 4.OA.2, 4.OA.3, 4.NF.3b)

3. Samantha has 3 times as many baseball cards as Mark. Mark has 12 baseball cards. Write an equation that shows how many cards Samantha has.

$$3 \times 12 = 36$$

4. A store worker wants to pack 137 cans into boxes. Each box can hold 9 cans. The worker fills as many boxes as possible. How many cans does the worker have left?

**2 cans**

5. Gina has 24 raisins. She wants to give the same number of raisins to each of 8 friends. Draw rings around groups of the raisins to show how she should divide them. How many raisins should she give each friend?



**3 raisins**

6. Nate's quiche is cut into 7 equal parts. Only  $\frac{3}{7}$  of the quiche is left. He wants to give 3 friends an equal part. Write  $\frac{3}{7}$  as the sum of unit fractions.

$$\frac{3}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$



Name \_\_\_\_\_

### Parallel Lines and Perpendicular Lines



**COMMON CORE STANDARD—4.G.1**  
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Use the figure for 1–3.

1. Name a pair of lines that appear to be perpendicular.

**Think:** Perpendicular lines form right angles.  
 $\overleftrightarrow{AB}$  and  $\overleftrightarrow{EF}$  appear to form right angles.

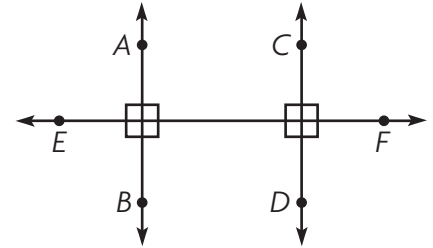
$\overleftrightarrow{AB}$  and  $\overleftrightarrow{EF}$

2. Name a pair of lines that appear to be parallel.

$\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$

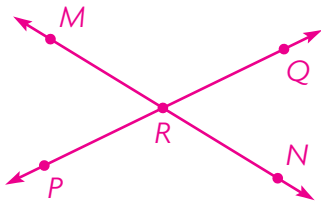
3. Name another pair of lines that appear to be perpendicular.

$\overleftrightarrow{EF}$  and  $\overleftrightarrow{CD}$



Draw and label the figure described. Possible drawings are shown.

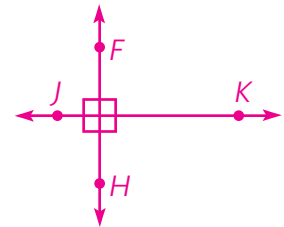
4.  $\overleftrightarrow{MN}$  and  $\overleftrightarrow{PQ}$  intersecting at point R



5.  $\overleftrightarrow{WX} \parallel \overleftrightarrow{YZ}$



6.  $\overleftrightarrow{FH} \perp \overleftrightarrow{JK}$



### Problem Solving



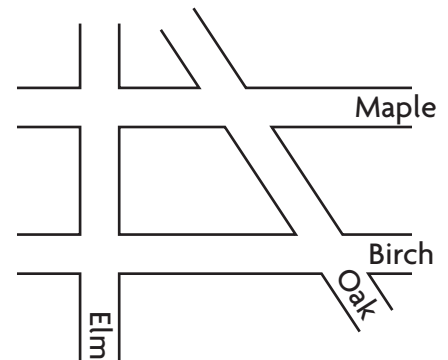
Use the street map for 7–8.

7. Name two streets that intersect but do not appear to be perpendicular.

**Oak and Maple or Oak and Birch**

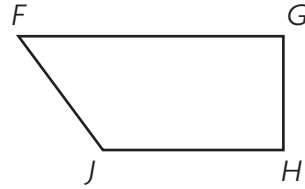
8. Name two streets that appear to be parallel to each other.

**Maple and Birch**



## Lesson Check (4.G.1)

1. Write a capital letter that appears to have perpendicular line segments?
2. In the figure, which pair of line segments appear to be parallel?



**Possible answer: T**

**$\overline{FG}$  and  $\overline{JH}$**

## Spiral Review (4.NBT.5, 4.NBT.6, 4.NF.2, 4.G.2)

3. Nolan drew a right triangle. How many acute angles did he draw?
4. Mike drank more than half the juice in his glass. What fraction of the juice could Mike have drunk?

**2 acute angles**

**Possible answer:  $\frac{5}{8}$**

5. A school principal ordered 1,000 pencils. He gave an equal number to each of 7 teachers until he had given out as many as possible. How many pencils were left?
6. A carton of juice contains 64 ounces. Ms. Wilson bought 6 cartons of juice. How many ounces of juice did she buy?

**6 pencils**

**384 ounces**

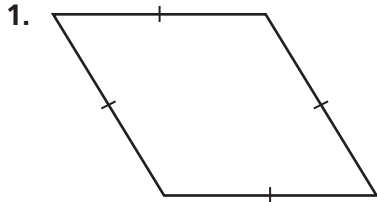
Name \_\_\_\_\_

### Classify Quadrilaterals



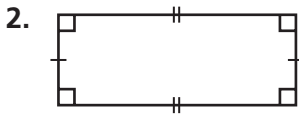
**COMMON CORE STANDARD—4.G.2**  
Draw and identify lines and angles and classify shapes by properties of their lines and angles.

Classify each figure as many ways as possible. Write *quadrilateral, trapezoid, parallelogram, rhombus, rectangle, or square*.

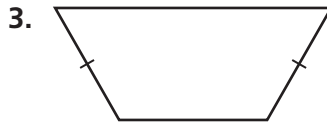


**Think:** 2 pairs of parallel sides  
4 sides of equal length  
0 right angles

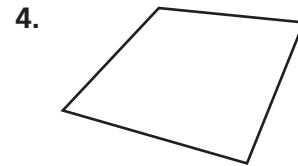
quadrilateral, parallelogram,  
rhombus



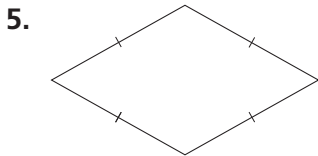
quadrilateral,  
parallelogram,  
rectangle



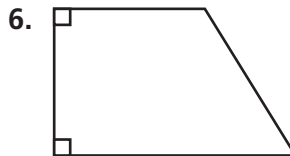
quadrilateral,  
trapezoid



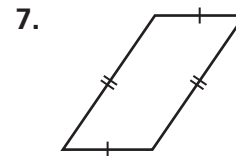
quadrilateral



quadrilateral,  
parallelogram,  
rhombus



quadrilateral,  
trapezoid



quadrilateral,  
parallelogram

### Problem Solving



8. Alan drew a polygon with four sides and four angles. All four sides are equal. None of the angles are right angles. What figure did Alan draw?

a quadrilateral  
or rhombus

9. Teresa drew a quadrilateral with 2 pairs of parallel sides and 4 right angles. What quadrilateral could she have drawn?

a square or rectangle

## Lesson Check (4.G.2)

1. Joey is asked to name a quadrilateral that is also a rhombus. What should be his answer?
2. What quadrilateral has exactly one pair of parallel sides?

**square**

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**trapezoid**

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## Spiral Review (4.OA.4, 4.OA.5, 4.NF.3d, 4.G.1)

3. Terrence has 24 eggs to divide into equal groups. What are all the possible numbers of eggs that Terrence could put in each group?
4. In a line of students, Jenna is number 8. The teacher says that a rule for a number pattern is *add 4*. The first student in line says the first term, 7. What number should Jenna say?

**1, 2, 3, 4, 6, 8, 12, 24**

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**35**

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5. Lou eats  $\frac{6}{8}$  of a pizza. What fraction of the pizza, in simplest form, is left over?
6. Name a capital letter that appears to have parallel lines.

**$\frac{1}{4}$**

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**Possible answer: N**

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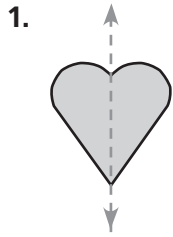
Name \_\_\_\_\_

# Line Symmetry

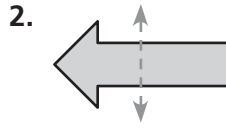


**COMMON CORE STANDARD—4.G.3**  
 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

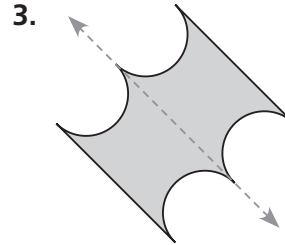
Tell if the dashed line appears to be a line of symmetry.  
 Write *yes* or *no*.



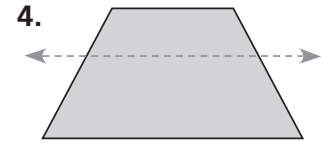
yes



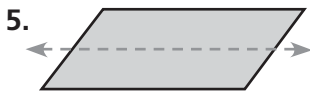
no



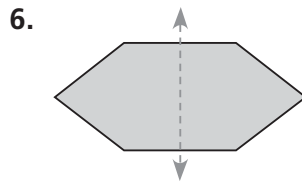
yes



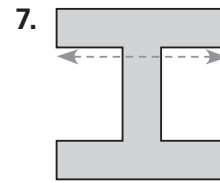
no



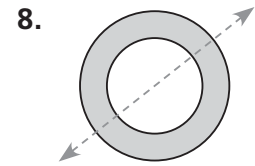
no



yes



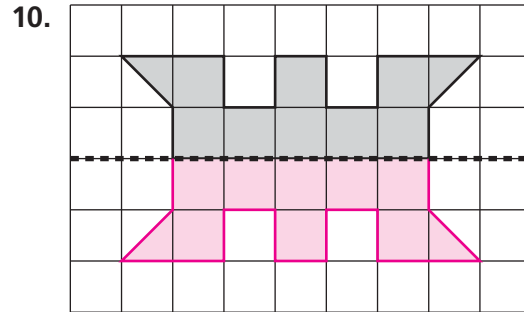
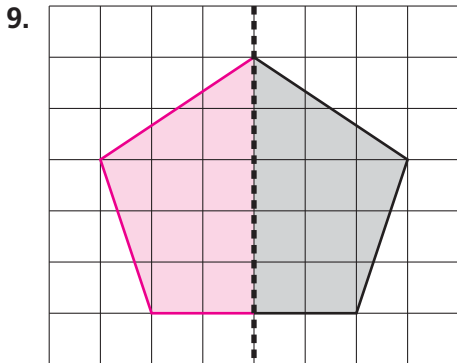
no



yes

**Check students' drawings.**

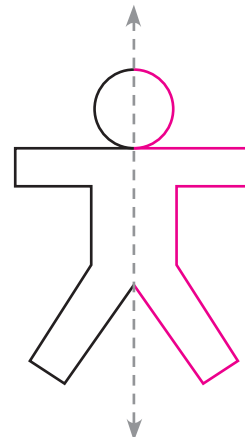
Complete the design by reflecting over the line of symmetry.



## Problem Solving



11. Kara uses the pattern at the right to make paper dolls. The dashed line represents a line of symmetry. A complete doll includes the reflection of the pattern over the line of symmetry. Complete the design to show what one of Kara's paper dolls looks like.



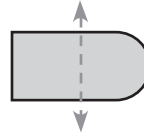
## Lesson Check (4.G.3)

1. What word best describes the line of symmetry in the letter D?
2. Does the shape below show a correct line of symmetry? Explain.



**horizontal**

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**No, the parts do not match.**

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## Spiral Review (4.NBT.5, 4.NBT.6, 4.NF.2, 4.NF.4c)

3. The class has 360 unit cubes in a bag. Johnnie divides the unit cubes equally among 8 groups. How many unit cubes will each group get?
4. There are 5,280 feet in one mile. How many feet are there in 6 miles?

**45 unit cubes**

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**31,680 feet**

---

5. Sue has 4 pieces of wood. The lengths of her pieces of wood are  $\frac{1}{3}$  foot,  $\frac{2}{5}$  foot,  $\frac{3}{10}$  foot, and  $\frac{1}{4}$  foot. Which piece of wood is the shortest?
6. Alice has  $\frac{1}{5}$  as many miniature cars as Sylvester has. Sylvester has 35 miniature cars. How many miniature cars does Alice have?

**the  $\frac{1}{4}$  foot piece**

---

**7 miniature cars**

---

Name \_\_\_\_\_

### Find and Draw Lines of Symmetry

Tell whether the shape appears to have zero lines, 1 line, or more than 1 line of symmetry.

Write *zero*, *1*, or *more than 1*.



**COMMON CORE STANDARD—4.G.3**  
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. 1      **more than 1**

2. more than 1

3. zero

4. more than 1

Does the design have line symmetry? Write *yes* or *no*.  
If your answer is yes, draw all lines of symmetry.

5. yes

6. yes

7. no

8. yes

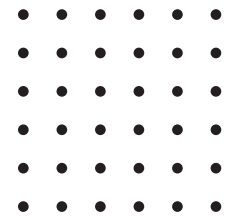
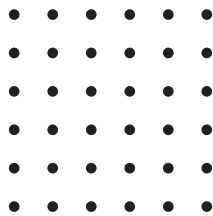
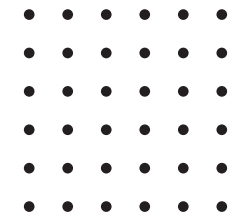
### Check students' drawings.

Draw a shape for the statement. Draw the line or lines of symmetry.

9. zero lines of symmetry

10. 1 line of symmetry

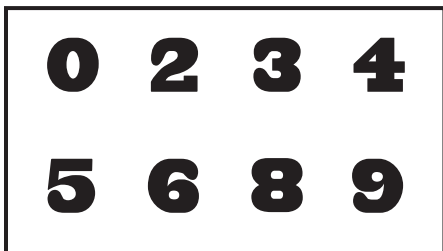
11. 2 lines of symmetry



### Problem Solving



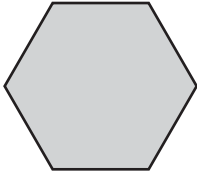
Use the chart for 12–13.



12. Which number or numbers appear to have only 1 line of symmetry?  
3
13. Which number or numbers appear to have 2 lines of symmetry?  
0 and 8

## Lesson Check (4.G.3)

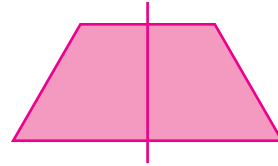
1. How many lines of symmetry does this shape appear to have?



6 lines of symmetry

2. Draw a shape that has exactly 1 line of symmetry.

**Possible drawing:**



## Spiral Review (4.NF.1, 4.NF.4b, 4.NF.6, 4.G.2)

3. Richard practiced each of 3 piano solos for  $\frac{5}{12}$  hour. Expressed in simplest form, how long did he practice in all?

$1\frac{1}{4}$  hours

4. Write a decimal that is equivalent to three and ten hundredths.

Possible answer: 3.1

5. Lynne used  $\frac{3}{8}$  cup of flour and  $\frac{1}{3}$  cup of sugar in a recipe. What number is a common denominator for  $\frac{3}{8}$  and  $\frac{1}{3}$ ?

Possible answer: 24

6. Kevin draws a figure that has four sides. All sides have the same length. His figure has no right angles. What figure does Kevin draw?

rhombus



Name \_\_\_\_\_

**Problem Solving • Shape Patterns**



**COMMON CORE STANDARD—4.OA.5**  
Generate and analyze patterns.

**Solve each problem.**

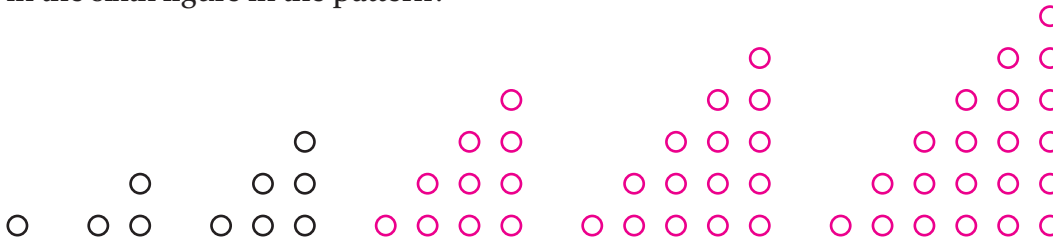
1. Marta is using this pattern to decorate a picture frame.

Describe the pattern. Draw what might be the next three figures in the pattern.



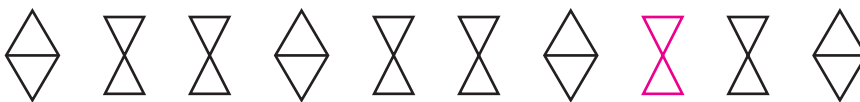
**Possible answer: the pattern repeats:**  
one triangle followed by two squares.

2. Describe the pattern. Draw what might be the next three figures in the pattern. How many circles are in the sixth figure in the pattern?



**Possible answer: add 1 more column with**  
1 more circle than in the previous column; 21.

3. Larry stencils this pattern to make a border at the top of his bedroom walls. Describe the pattern. Draw what might be the missing figure in the pattern.



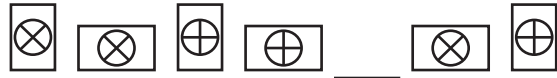
**Possible answer: 2 triangles placed side to side**  
followed by 2 sets of 2 triangles placed vertex to vertex.

## Lesson Check (4.OA.5)

1. Draw what might be the next three figures in this pattern?



2. Draw what might be the missing figure in the pattern below.



## Spiral Review (4.OA.4, 4.NF.3d, 4.NF.4a, 4.NF.7)

3. Chad has two pieces of wood. One piece is  $\frac{7}{12}$  foot long. The second piece is  $\frac{5}{12}$  foot longer than the first piece. How long is the second piece?
4. Olivia finished a race in 40.64 seconds. Patty finished the race in 40.39 seconds. Miguel finished the race in 41.44 seconds. Chad finished the race in 40.46 seconds. Who finished the race in the least time?

**1 foot**

**Patty**

5. Justin bought 6 ribbons for an art project. Each ribbon is  $\frac{1}{4}$  yard long. How many yards of ribbon did Justin buy?
6. Kyle and Andrea were asked to make a list of prime numbers.  
Kyle: 1, 3, 7, 19, 23  
Andrea: 2, 3, 5, 7, 11  
Whose list is correct?

**$1\frac{1}{2}$  yards**

**Only Andrea's list**