Geometric Shapes and Equal Shares

Focus Question

How can I name, draw, and partition geometric shapes?

Hi, I'm Chloe.

I want to be a carpenter. When making steps, I can make rectangles of equal size from one big rectangular board. Knowing about shapes and equal shares will make my job easier.
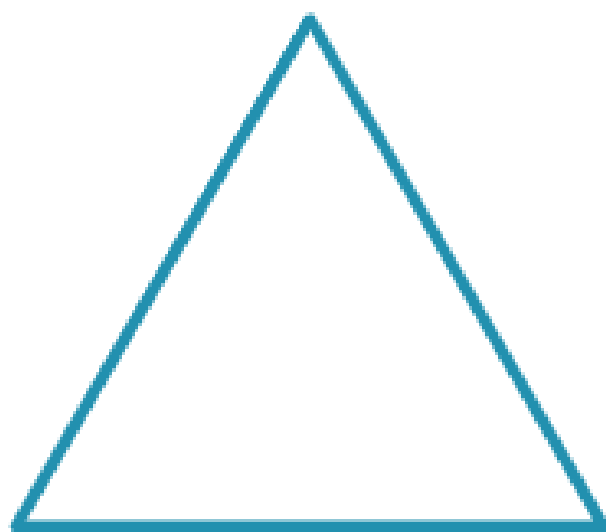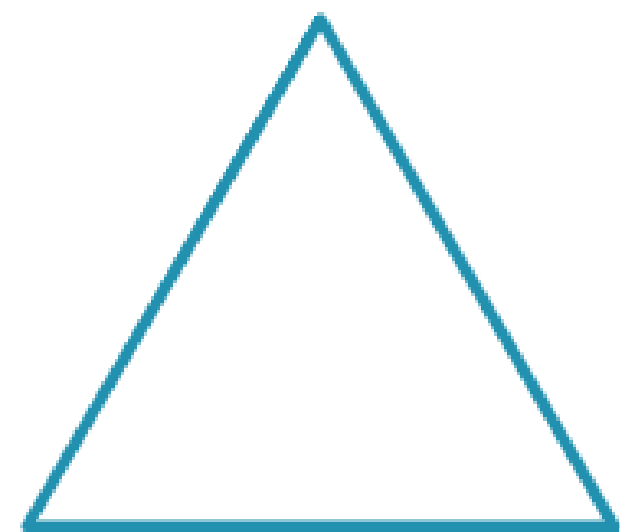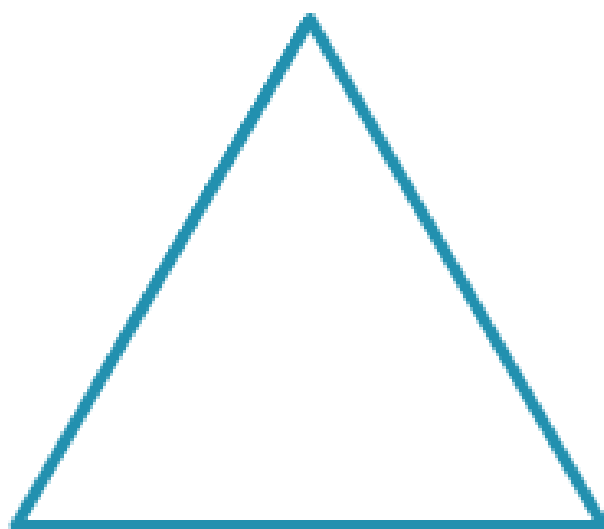
STEM video | GO ONLINE

Prove Me Wrong!

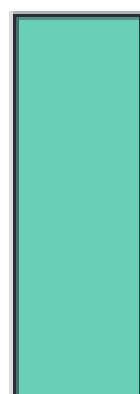Listen for directions. Use pattern blocks to completely fill these triangles.

?

Be Curious

How are they the same?
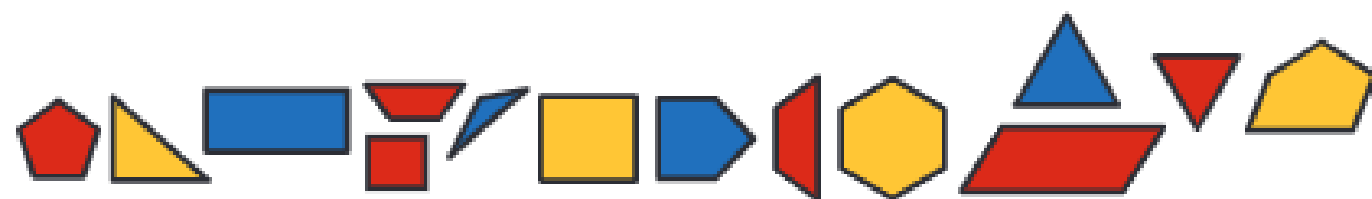### How are they different?

Math is... Mindset
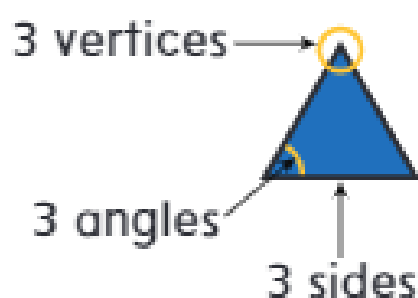
How can you show respect to others?

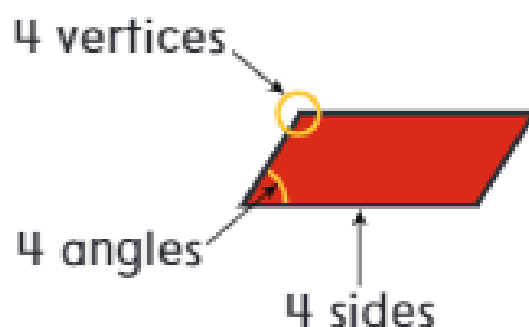# Learn

How are the shapes the same? How are they different?

The number of sides, **angles**, or **vertices** can help you identify **polygons**.

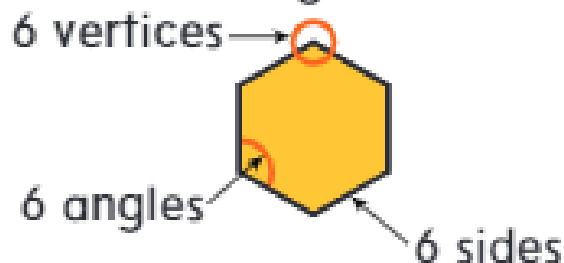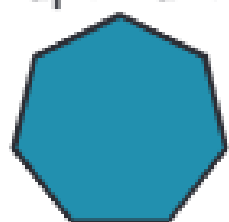| triangle	quadrilateral
3 vertices 3 angles 3 sides	4 vertices 4 angles 4 sides
pentagon	hexagon
5 vertices 5 angles 5 sides	6 vertices 6 angles 6 sides
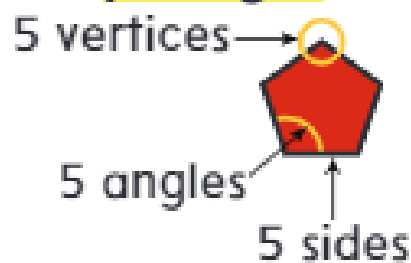
2-dimensional shapes can be recognized by their defining **attributes**.

Math is... **Patterns**

What do you notice about sides, angles, and vertices?

Work Together

How many sides, angles, and vertices does each shape have?

_____ sides
_____ angles
_____ vertices

_____ sides
_____ angles
_____ vertices

On My Own
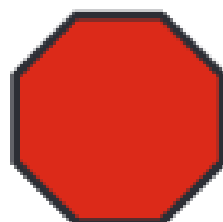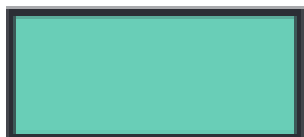
Name _____

How many sides, angles, and vertices does the shape have?

1. _____ sides
   _____ angles
   _____ vertices

2. _____ sides
   _____ angles
   _____ vertices

3. _____ sides
   _____ angles
   _____ vertices

4. _____ sides
   _____ angles
   _____ vertices

Choose all the correct answers.

5. Which shapes are hexagons?

   A.   B.   C.   D.
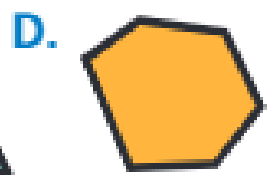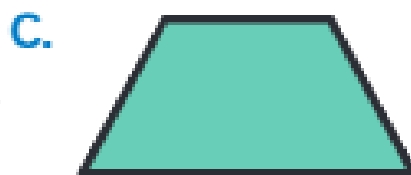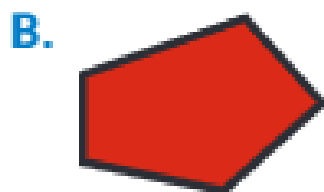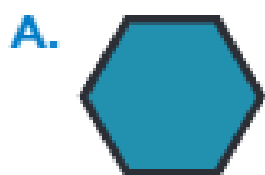
6. Which shapes are triangles?

   A.   B.   C.   D.
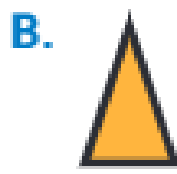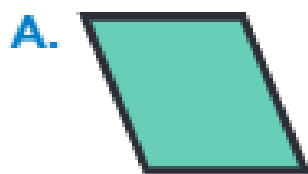
7. Which shapes are pentagons?

   A.   B.   C.   D.
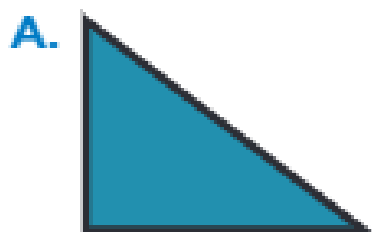
8. STEM Connection Chloe builds a birdhouse. What shape is the side of the roof? Explain how you know.

9. Extend Your Thinking Find 3 different shapes in the room. Explain how you can identify each shape.

Reflect

How can you identify polygons?

Math is... Mindset

How have you shown respect to others?

Be Curious

Tell me everything you can.

Math is... Mindset

What helps you make good decisions about your behavior?

Learn

How can you draw a 2-dimensional shape given its attributes?

- 3 sides
- 3 angles
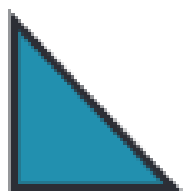
- 4 sides
- 4 angles
- all sides the same length
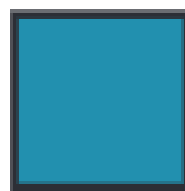
- 4 sides
- 4 angles
- opposite sides the same length

Math is... Exploring

What is the difference between a rectangle and a square?

- 5 sides
- 5 angles
- all sides the same length

- 6 sides
- 6 angles
- all sides different lengths
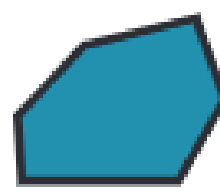
2-dimensional shapes can be drawn based on their defining attributes.

🗨 Work Together

What shape has 5 sides, 5 angles, and all sides different lengths? Draw a shape that matches the attributes. Then write the name.

Name _____

Draw a shape that matches the attributes. Then write the name.

1. What shape has 3 sides, 3 angles, and all sides the same length?

2. What shape has 6 sides, 6 angles, and all sides the same length?

3. What shape has 4 sides, 4 angles, and all sides different lengths?

4. **Error Analysis** Maggie says she drew a square. How do you respond to her?

What are 3 defining attributes of the shape?

5.

6.

7.
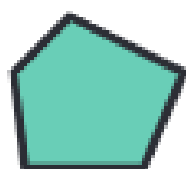
8. **Extend Your Thinking** Stephen outlined an area of his yard for a garden. The outline has 4 sides and 4 vertices. What shape could the outline be? Explain your thinking and draw 2 possible examples.

Reflect

How does knowing different attributes help you draw 2-dimensional shapes?

Math is... Mindset

What helped you make good decisions about your behavior?

Recognize 3-Dimensional Shapes by Their Attributes

Be Curious

Which doesn't belong?
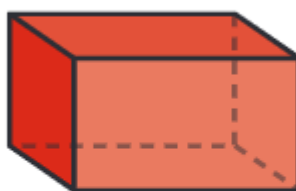
Math is... **Mindset**

What are some ways to build positive relationships with classmates?

Unit 12 · Geometric Shapes and Equal Shares **213**

Learn

How are the shapes the same? How are they different?

The number of faces, edges, vertices, bases, or having an apex can help you identify 3-dimensional shapes.

	Cube	Rectangular Prism	Sphere
Faces	6 squares	6 rectangles	0
Edges	12	12	0
Vertices	8	8	0
Example			

apex

bases

3-dimensional shapes can be recognized by their defining attributes.

Math is... **Thinking**

What is the difference between 2-dimensional and 3-dimensional shapes?

Work Together

How are the shapes the same?
How are they different? Explain.

On My Own

Name _____

How many of each attribute does the shape have? What is the shape?

1.
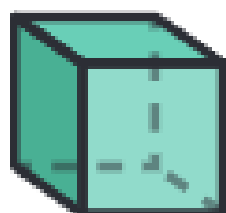
_____ faces

_____ edges

_____ vertices

This shape is a _____.

2.
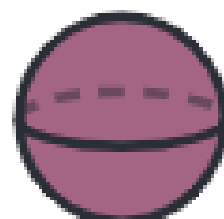
_____ faces

_____ edges

_____ vertices

This shape is a ___

3.
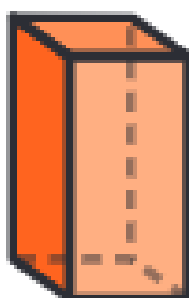
_____ faces

_____ edges

_____ vertices

This shape is a _____

_____.

4.
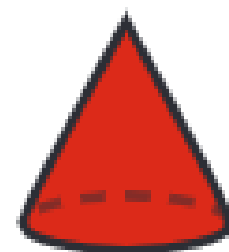
_____ base

_____ apex

This shape is a ___

5. Which shapes are rectangular prisms? Choose all correct answers.

6. Which shapes are spheres? Choose all the correct answers.

A.   B.   C.   D.

7. **STEM Connection** Sienna is serving water to runners at a marathon. What shape are the cups? Explain.

8. **Extend Your Thinking** Aisha has an object with 6 faces, 12 edges, and 8 vertices. What shape could the object be? Explain.

Reflect

How can you identify 3-dimensional shapes?

Math is... **Mindset**

How did you build positive relationships with classmates?

Understand Equal Shares

Be Curious

How are they the same?
How are they different?

Math is... **Mindset**

How can your strengths
help you learn today?

Learn

Some friends are using this paper to make crafts.

What are some different ways they can share each paper between either 2, 3, or 4 friends?

Shares that are the same size are **equal shares**.
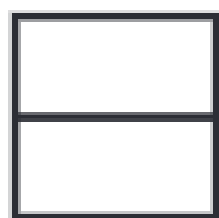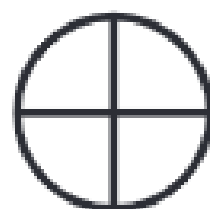
2 equal shares	3 equal shares	4 equal shares
2 **halves**	3 **thirds**	4 **fourths**

Shapes, such as circles, squares, and rectangles, can be **partitioned** into equal shares.

Math is... Modeling

How can a circle be partitioned into 3 equal shares?

Work Together

How can you partition the rectangle into 4 equal shares? Draw to show your work.
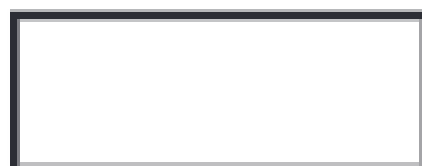
Name _____

Which shapes are partitioned into equal shares?
Choose all the correct answers.

I. A. B. C.

2. A. B. C.

3. A. B. C.

4. A. B. C.

5. How can you partition the circle into 2 equal shares? Draw to show your work.

6. How can you partition the square into 3 equal shares? Draw to show your work.

7. How can you partition the rectangle into 4 equal shares? Draw to show your work.

8. Extend Your Thinking How can you partition a shape that has 4 sides, 4 angles, and all sides the same length into 2 equal shares? Draw to show your work. Aubree thinks the shape will be a rectangle. How do you respond to her?

🔄 Reflect

How can you partition rectangles, circles, and squares into equal shares?

Math is... **Mindset**

How have your strengths helped you learn today?

Partitioning Shapes

CHERYL TOBEY
MATH PROBES

Name _____

Decide if each shape has been partitioned into four equal shares. Circle *Yes* or *No*.

1.

Are there four equal shares?

Yes   No

Explain why you chose Yes or No.

2.

Are there four equal shares?

Yes   No

Explain why you chose Yes or No.

Decide if each shape has been partitioned into four equal shares. Circle *Yes* or *No*.

3.

Are there four equal shares?

Yes   No

Explain why you chose Yes or No.

4.

Are there four equal shares?

Yes   No

Explain why you chose Yes or No.

Reflect On Your Learning

Relate Equal Shares

Be Curious

Tell me everything you can.

Math is... **Mindset**

What helps you stay
focused on your work?

Learn

Olive says you can partition these shapes into 2, 3, or 4 equal shares in different ways.

How can you relate the equal shares?

The equal shares do not have to be the same shape.

halves   thirds   fourths

Math is... **Explaining**

How are the partitioned shapes the same? How are they different?

Shapes, such as circles or rectangles, can be partitioned into equal shares in different ways.

🔵 Work Together

How can you partition the square into fourths? Show three different ways.

Name _____

Choose all the correct answers.

1. Which shows a circle partitioned into halves?

   A.   B.   C.

2. Which shows a rectangle partitioned into thirds?

   A.   B.   C.

3. Which shows a square partitioned into fourths?

   A.   B.   C.

4. How can you partition the circle into equal shares? Show two different ways.

5. **Error Analysis** Selena partitions a rectangle into thirds. Brian partitions the same rectangle into thirds. Their shares are different shapes. Selena and Brian think their shares are not equal because they are not the same shape. How would you respond to them?

6. **Extend Your Thinking** A slice of cinnamon bread is in the shape of a square. Draw a picture to explain how to partition the slice of bread to split it equally between 4 friends. How much of the slice of bread does each friend get?

Reflect

Why can shapes be partitioned into equal shares in more than one way?

Math is... Mindset
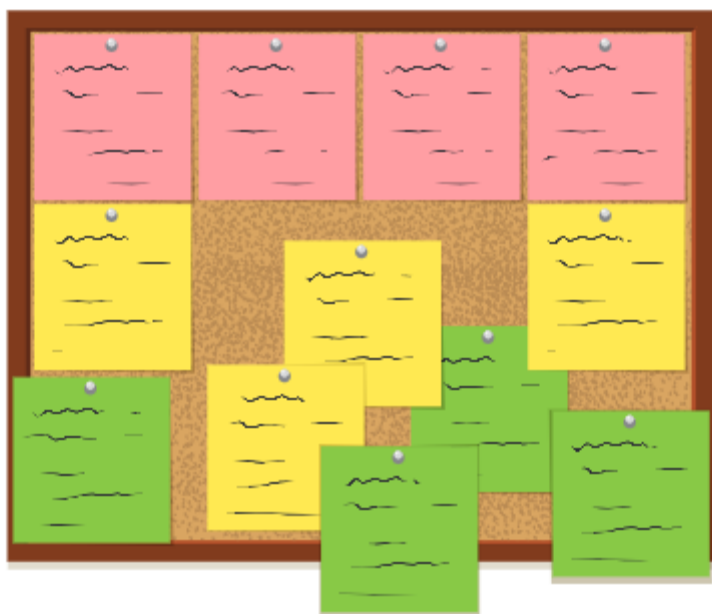
What has helped you stay focused on your work?

Partition a Rectangle into Rows and Columns

Be Curious

What do you notice?
What do you wonder?

Math is... **Mindset**

What helps you understand your classmates' ideas?

Learn

How can you find the number of squares that will fill the rectangle?

You can use repeated addition to find the number of squares.

▶ **One Way** Add the rows. Each row has 4 squares.

←4
←4
←4

row

$4 + 4 + 4 = 12$
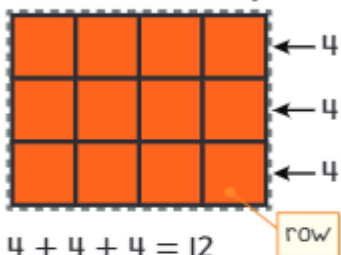
Math is... Structure

How can skip counting help you find the total number of squares?

▶ **Another Way** Add the columns.
Each column has 3 squares.

column

↑ ↑ ↑ ↑
3 3 3 3

$3 + 3 + 3 + 3 = 12$
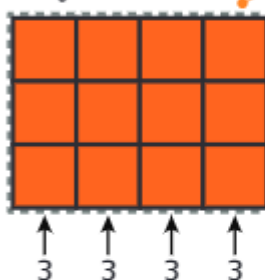
Rectangles can be partitioned into rows and columns using squares of equal size.

🗨 Work Together

How can you partition the rectangle using squares of equal size? Draw to show your work. How many squares can you partition the rectangle into?

Total squares: ____

How many rows, columns, and squares is the rectangle partitioned into? Write an equation to find the total number of squares.

1.

a. Rows: ____

b. Columns: ____

c. Equation: _____

d. Total squares: ____

2.

a. Rows: ____

b. Columns: ____

c. Equation: _____

d. Total squares: ____

3.

a. Rows: ____

b. Columns: ____

c. Equation: _____

d. Total squares: ____

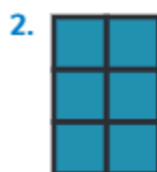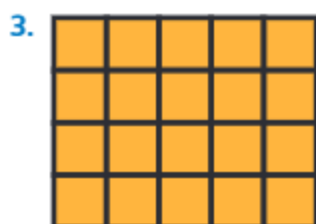How can you partition the rectangle using squares of equal size? Draw to show your work. What is the total number of squares?

4.

Total squares: ____

5.
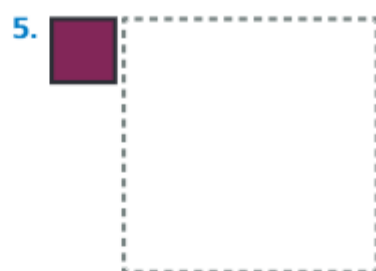
Total squares: ____

6. **Extend Your Thinking** Leo and his sister want to partition their rectangular garden into square plots. Leo says there can be 3 square plots. His sister says there can be 12 square plots. Who do you agree with? Draw a picture to show why.

Reflect

How can you partition a rectangle into rows and columns using squares of equal size?

Math is... **Mindset**
What has helped you understand your classmates' ideas?

Unit Review

Vocabulary Review

Draw a line to match.

1. fourths
   (Lesson 12–4)

2. halves
   (Lesson 12–4)

3. pentagon
   (Lesson 12–1)

4. quadrilateral
   (Lesson 12–1)

5. thirds
   (Lesson 12–4)

Review

6. Which shapes are spheres? Choose all the correct answers. (Lesson 12-3)

A.

B.

C. Baking Powder

D.

7. Which shapes show equal shares? Choose all the correct answers. (Lesson 12-4)

A.   B.   C.   D.

8. Which shapes have 5 sides, 5 angles, and 5 vertices? Choose all the correct answers. (Lesson 12-1)

A.

B.

C.

D.

9. Mr. Johnson partitions a gym floor that is shaped like a rectangle. Show two ways he could partition the gym floor into halves. Draw lines to show your work.
(Lesson 12-5)

10. Nina drew a shape that has 3 sides and 3 angles, where all of the sides are the same length. Which shape did Nina draw? (Lesson 12-2)

A.

B.

C.

D.

11. How can you partition the rectangle using squares of equal size? Draw lines to show your work. (Lesson 12-6)

Performance Task

A carpenter remodeled a bedroom and bathroom in his house.

Part A: A carpenter cut a piece of carpet for a bedroom. It has 4 angles and 4 sides. The opposite sides are the same length, but all 4 sides are not the same length. Draw a piece of carpet the carpenter could have cut. What is the name of the shape of the piece of carpet?

Part B: A carpenter used square tiles for the back wall in a shower. How many square tiles did the carpenter use?

Make a drawing and write two equations to find the number of square tiles used.

⊕ Reflect

How can you name, draw, and partition geometric shapes?

Fluency Practice

Name _____

Fluency Strategy

You can use many strategies to subtract 2-digit numbers.
One way is to decompose one number in the equation.

$58 - 43 = ?$ **Subtract tens:** $58 - 40 = 18$

$40 + 3$ **Count back:** $18 - 3 = 15$

So, $58 - 43 = 15$.

1. What strategies can you use to subtract $72 - 38$?
   Show your work.

Fluency Flash

2. What is the difference? Fill in the blanks.

$44 - 21 = ?$ Subtract tens: $44 - $ _____ $= $ _____

____ + ____   Count back: _____ $- $ _____ $= $ _____

                So, $44 - 21 = $ _____.

Fluency Check

What is the sum or difference?

3. $37 - 19 = $ _____

4. $64 + 19 = $ _____

5. $71 + 26 = $ _____

6. $52 - 4 = $ _____

7. $82 - 49 = $ _____

8. $45 + 13 = $ _____

9. $65 - 8 = $ _____

10. $77 - 24 = $ _____

11. $64 - 23 = $ _____

12. $45 - 31 = $ _____

13. $28 + 32 = $ _____

14. $67 - 49 = $ _____

Fluency Talk

What strategies can you use to subtract $53 - 36$? Explain your thinking.

What strategies can you use to add $15 + 76$? Explain.

منتديات صقر الجنوب