Chapter 13

Name _____

Perimeter and Area of Rectangles with Fractional and Decimal Side Lengths

Show What You Know

Addition of Fractions and Decimals

Add.

1. $2.5 + 3.9 =$ _____
2. $\frac{5}{9} + \frac{8}{9} =$ _____
3. $12.28 + 5.09 =$ _____
4. $2\frac{2}{3} + 4\frac{1}{6} =$ _____
5. $7.08 + 4.4 =$ _____
6. $4\frac{3}{4} + 5\frac{7}{8} =$ _____

Multiplication of Fractions and Decimals

Multiply.

7. $3.04 \times 4.12 =$ _____
8. $\frac{3}{5} \times \frac{4}{5} =$ _____
9. $4.25 \times 1.6 =$ _____
10. $1\frac{3}{10} \times 2\frac{7}{10} =$ _____
11. $5.7 \times 7.2 =$ _____
12. $2\frac{5}{6} \times 1\frac{1}{12} =$ _____

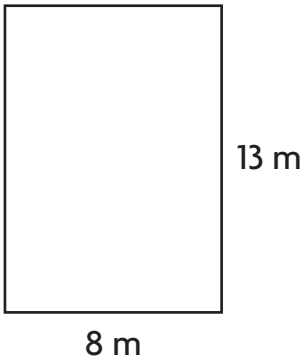
Perimeter and Area

Find the perimeter and area of each rectangle.

13.

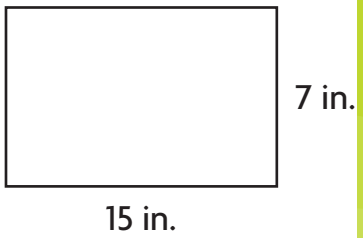
Perimeter: _____
Area: _____

14.



Perimeter: _____
Area: _____

15.



Perimeter: _____
Area: _____

MATH in the Real World

Emilio ran 1.75 miles yesterday. Today he ran 3.2 times the distance he ran yesterday. How many total miles did Emilio run?

Vocabulary Builder

Go Online For more help

Visualize It

Match the review words with their examples.

Connect to Vocabulary

Review Words
- area
- formula
- perimeter

What is it?	What are some examples?
_____ →	
_____ →	$P = 2l + 2w$ $A = l \times w$
_____ →	

Understand Vocabulary

Complete the sentences by using the review words.

1. A _____ is an equation that represents a mathematical rule.

2. The _____ is the sum of the side lengths of a polygon.

3. The _____ is the number of unit squares that cover a closed plane figure.

Name _____

Find Perimeter and Area of Rectangles with Decimal Side Lengths

Florida's B.E.S.T.

- **Geometric Reasoning** 5.GR.2.1
- **Number Sense & Operations** 5.NSO.2.3
- **Fractions** 5.FR.2.2
- **Algebraic Reasoning** 5.AR.1.2
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1

I Can use formulas to find the area and perimeter of shapes with decimal side lengths.

UNLOCK the Problem

A **formula** is an equation that expresses a mathematical rule. You can use formulas to find the perimeter and area of rectangles with decimal side lengths.

Lloyd is planting a rectangular garden that measures 12.5 meters by 8.3 meters. He wants to put a fence around it to protect his vegetables from rabbits. How many meters of fencing does he need?

Use a formula to find the perimeter.

$P = l + w + l + w$ P = perimeter; l = length; w = width

$P = 12.5 +$ _____ $+$ _____ $+$ _____ Replace the unknowns with the lengths and the widths.

$P =$ _____ Add.

The perimeter is _____ meters. So, Lloyd needs _____ meters of fencing.

Remember

Area is measured in square units, such as square feet or sq ft.

Lloyd needs to find how large his garden is so he can order enough mulch for the garden. What is the area of Lloyd's garden?

Use a formula to find the area.

$A = l \times w$ A = area; l = length; w = width

$A =$ _____ $\times$ _____ Replace the unknowns with the length and the width.

$A =$ _____ Multiply.

So, the area of Lloyd's garden is _____ square meters.

Try This!

You can also use the formula $P = 2l + 2w$ to find the perimeter. What is the perimeter of a rectangle that is 13.4 centimeters wide and 15.8 centimeters long.

$P = 2 \times$ _____ $+ 2 \times$ _____ Replace the unknowns with the length and the width.

$P =$ _____

The perimeter is _____ centimeters.

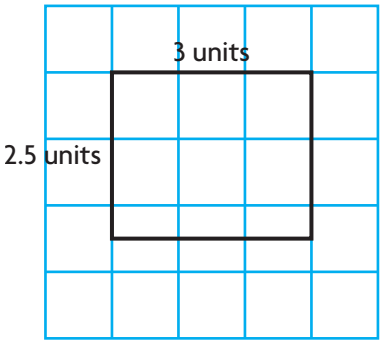
Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

Explain how you can use the properties of operations to rewrite $P = l + w + l + w$ as $P = 2l + 2w$.

You can use tiling to find the area of a rectangle with decimal side lengths.

Example **Find the area of a rectangle with a length of 3 units and a width of 2.5 units.**



STEP 1 Draw the rectangle on a grid.

STEP 2 Count the number of squares.

_____ unit squares

_____ half squares

STEP 3 Change half squares to whole squares.

3 half-squares = 1.5 unit squares

STEP 4 Add the unit squares to find the area.

6 + 1.5 = _____

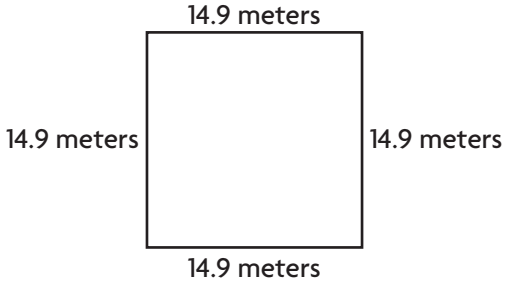
So, the area of the rectangle is _____ square units.

Share and Show

Math Board

Find the perimeter and area of the figure.

1.



P = _____ + _____ + _____ + _____

P = _____

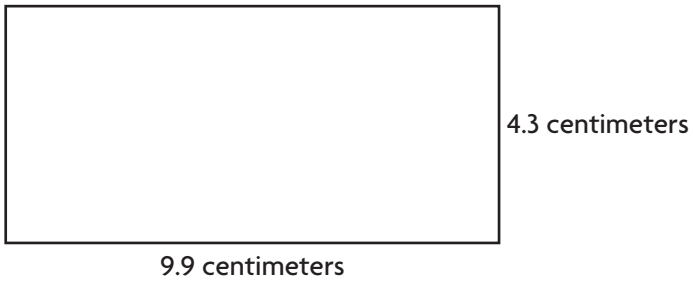
The perimeter is _____ meters.

A = _____ × _____

A = _____

The area is _____ square meters.

2.



$P = 2($_____ + _____$)$

$P = 2($_____$)$

P = _____

The perimeter is _____ centimeters.

A = _____ × _____

A = _____

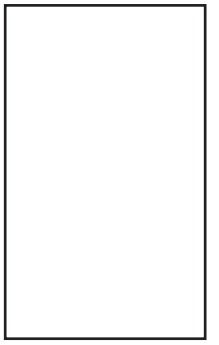
The area is _____ square centimeters.

Name _____

On Your Own

Find the perimeter and the area of the figure.

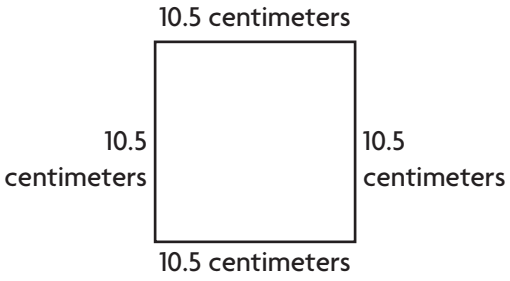
3.



Perimeter = _____

Area = _____

4.



Perimeter = _____

Area = _____

5. Omar plans to stain a deck that is 4.1 meters × 7.9 meters. If one can of stain covers an area of 20 square meters, how many cans of stain will he need? Explain.

_____

_____

6. Latoya uses 16.4 meters of wood to make a rectangular garden bed. If the length of the garden bed is 3.3 meters, what is the width?

_____

_____

_____

_____

7. Naunet wants to fence off two side-by-side sections of her garden. Each section is 7.5 meters long and 2 meters wide. She says she needs 38 meters of fencing. Explain what is wrong with her thinking. How much fencing does she really need?

_____

_____

Problem Solving · Applications

Fill in the bubble for the correct answer choice.

8. MTR Nia is fixing a rectangular sign. She plans to place metal trim around the sign edges. The rectangle measures 64.5 centimeters × 18.2 centimeters. How much trim will Nia need?

Ⓐ 46.3 centimeters

Ⓑ 82.7 centimeters

Ⓒ 100.9 centimeters

Ⓓ 165.4 centimeters

9. A rectangle has a length of 5.6 meters and a width of 4.8 meters. Which equation can you use to find the perimeter?

Ⓐ $P = 4.8 \times 5.6$

Ⓑ $P = 4.8 \times 4.8$

Ⓒ $P = 4.8 + 4.8 + 5.6 + 5.6$

Ⓓ $P = 4.8 + 5.6$

10. Shira had an "L" shaped piece of felt. Her mom cut it into two rectangles. One rectangle measured 4.5 centimeters by 9.3 centimeters. The other measured 4.5 centimeters by 3 centimeters. What is the total area of the two rectangles?

Ⓐ 13.5 square centimeters

Ⓑ 27.6 square centimeters

Ⓒ 41.85 square centimeters

Ⓓ 55.35 square centimeters

11. Mai wants to tile the floor of her kitchen. Each tile has an area of 1 square foot. The floor of her kitchen is 11.5 feet by 16 feet. How many tiles does she need?

Ⓐ 28

Ⓑ 133

Ⓒ 184

Ⓓ 256

Name _____

Find Perimeter and Area of Rectangles with Decimal Side Lengths

Go Online
Interactive Examples

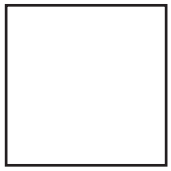
1. Find the perimeter of the rectangle.

$P =$ _____ + _____ + _____ + _____

$P =$ _____

The perimeter is _____ meters.

2. Find the area of the square.



$A =$ _____ × _____

$A =$ _____

The area is _____ square centimeters.

3. A rectangle has a perimeter of 68 inches. If the width of the rectangle is 10.25 inches, what is the length of the rectangle? Explain how you know.

_____

_____

_____

4. A square has a perimeter of 40.96 centimeters. What is the length of one side of the square?

_____

_____

Problem Solving Real World

5. Lea wants to put a fence around her garden. Her garden measures 13.1 meters by 15.7 meters. She has 50 meters of fencing. How many more meters of fencing does Lea need to put a fence around her garden?

_____

_____

_____

6. Grace wants to put a new layer of soil on her 12.8 meters by 16.2 meters garden. She finds the area of her garden so she knows how much soil to buy. If one bag of soil covers 20 square meters, how many bags of soil will Grace need? Explain.

_____

_____

_____

_____

Lesson Check

Fill in the bubble completely to show your answer.

7. A soccer field has a length of 91.44 meters and a width of 54.9 meters. Which equation can you use to find the area of the soccer field?

- (A) $A = 91.44 \times 54.9$
- (B) $A = 91.44 + 54.9 + 91.44 + 54.9$
- (C) $A = 91.44 + 54.9$
- (D) $A = 91.44 \times 4$

8. A baseball diamond is a square with a perimeter of 109.7 meters. What is the length of one side?

- (A) 12.73 meters
- (B) 27.425 meters
- (C) 54.85 meters
- (D) 90.7 meters

9. Zoey wants to cover her bedroom floor with carpet squares. Each square has an area of 1 square foot. Her bedroom measures 13.5 feet by 14 feet. How many carpet squares does Zoey need?

- (A) 55
- (B) 162
- (C) 189
- (D) 378

10. Edward wants to put a string of lights around a rectangular window that is 1.3 meters wide and 0.5 meter high. How long will the string of lights need to be to go around the window?

- (A) 0.65 meters
- (B) 1.8 meters
- (C) 3.6 meters
- (D) 6.5 meters

Spiral Review

11. Round 156.499 to the nearest hundredth.

_____

12. Multiply.

$745 \times 5{,}326$

_____

Name _____

Find Perimeter and Area of Rectangles with Fractional Side Lengths

Florida's B.E.S.T.

- **Geometric Reasoning (GR)** 5.GR.2.1
- **Fractions (FR)** 5.FR.2.2
- **Algebraic Reasoning (AR)** 5.AR.1.2
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1

I Can use formulas to find the area and perimeter of shapes with fractional side lengths.

UNLOCK the Problem

You can use formulas to find the perimeter and area of rectangles with fractional side lengths.

Pato buys a rug that is $8\frac{1}{2}$ feet wide and $10\frac{1}{4}$ feet long. He wants to put floor tape around the border to keep it from sliding across the floor. How much floor tape does he need?

Use a formula to find the perimeter.

$P = l + w + l + w$ P = perimeter; l = length; w = width

$P = 10\frac{1}{4} +$ _____ $+$ _____ $+$ _____ Replace the unknowns with the lengths and the widths.

$P =$ _____ Add.

The perimeter is _____ feet. So, Pato needs _____ feet of tape.

Remember

Area is measured in square units, such as square feet or sq ft.

Pato needs to find how large his rug is so he can order a mat to go under it. What is the area of Pato's rug?

Use a formula to find the area.

$A = l \times w$ A = area; l = length; w = width

$A =$ _____ $\times$ _____ Replace the unknowns with the length and the width.

$A =$ _____ Multiply.

So, the area of Pato's rug is _____ square feet.

Try This!

You can also use the formula $P = 2l + 2w$ to find the perimeter. What is the perimeter of a rectangle that is $6\frac{1}{3}$ feet long and 4 feet wide?

$P = 2 \times$ _____ $+ 2 \times$ _____ Replace the unknowns with the length and the width.

$P =$ _____

The perimeter is _____ feet.

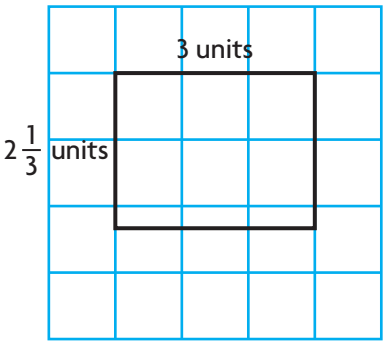
Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

How can you apply the Commutative Property to the formula for finding the area of a rectangle?

You can use tiling to find the area of a rectangle with fractional side lengths.

Example **Find the area of a rectangle with a length of 3 units and a width of $2\frac{1}{3}$ units.**



STEP 1 Draw the rectangle on the grid.

STEP 2 Count the number of squares.

_____ unit squares

_____ third squares

STEP 3 Change third squares to whole squares.

3 third-squares = 1 unit square

STEP 4 Add the unit squares to find the area.

6 + 1 = _____

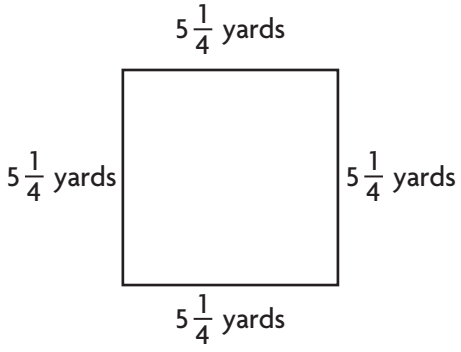
So, the area of the rectangle is _____ square units.

Share and Show

Math Board

Find the perimeter and area of the figure.

1.



P = _____ + _____ + _____ + _____

P = _____

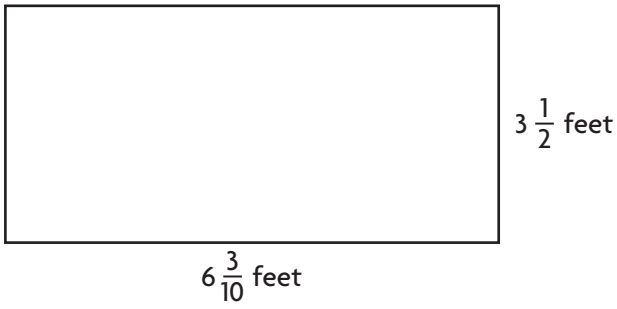
The perimeter is _____ yards.

A = _____ × _____

A = _____

The area is _____ square yards.

2.



P = 2(_____ + _____)

P = 2(_____)

P = _____

The perimeter is _____ feet.

A = _____ × _____

A = _____

The area is _____ square feet.

Name _____

On Your Own

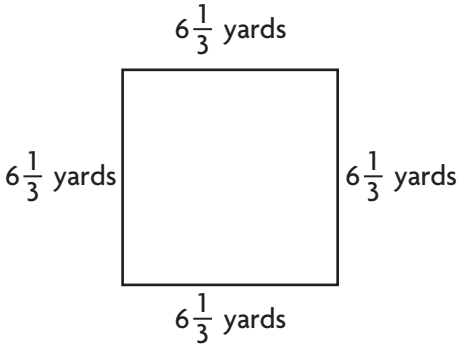
Find the perimeter and the area of the figure.

3.

Perimeter = _____

Area = _____

4.



Perimeter = _____

Area = _____

5. Explain how you can use s to write the formula for the perimeter of a square with side length s.

_____

_____

6. A rectangle has an area of $\frac{1}{8}$ square foot. If the length of the rectangle is $\frac{1}{2}$ foot, what is the width of the rectangle? Explain how you know.

_____

_____

_____

7. A rectangle has a width of $3\frac{5}{8}$ inches. The length of the rectangle is twice the width. What is the area of the rectangle? Explain how you know.

_____

_____

Problem Solving · Applications

Fill in the bubble for the correct answer choice.

8. **Apply** Philomena is making a rectangular banner. She plans to place red yarn around the banner's edges. The banner is $34\frac{1}{2}$ inches by $8\frac{3}{4}$ inches. How much yarn will Philomena need?

Ⓐ $43\frac{1}{4}$ inches

Ⓑ 85 inches

Ⓒ $86\frac{1}{2}$ inches

Ⓓ $84\frac{1}{2}$ inches

9. A rectangle has a length of $5\frac{3}{8}$ feet and a width of $4\frac{1}{2}$ feet. Which equation can you use to find the area?

Ⓐ $A = 5\frac{3}{8} \times 4\frac{1}{2}$

Ⓑ $A = 5\frac{3}{8} + 4\frac{1}{2}$

Ⓒ $A = 5\frac{3}{8} \times 4\frac{1}{2} + 5\frac{3}{8} + 4\frac{1}{2}$

Ⓓ $A = 2(5\frac{3}{8} + 4\frac{1}{2})$

10. Talia had an "T" shaped piece of cardboard. Her dad cut it into two rectangles. One rectangle measured $\frac{7}{2}$ inches by $\frac{9}{2}$ inches, and the other measured $\frac{3}{2}$ inches by $\frac{13}{2}$ inches. What is the total area of the two rectangles?

Ⓐ $16\frac{1}{2}$ square inches

Ⓑ $25\frac{1}{2}$ square inches

Ⓒ 51 square inches

Ⓓ 16 square inches

11. Serena wants to tile her bathroom wall. Each tile has an area of 3 square feet. The wall of her bathroom is $10\frac{1}{8}$ feet by 8 feet. How many tiles does she need?

Ⓐ 27

Ⓑ 81

Ⓒ 41

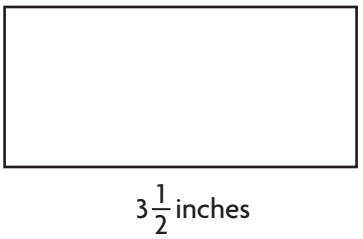
Ⓓ 54

Name _____

Find Perimeter and Area of Rectangles with Fractional Side Lengths

Go Online
Interactive Examples

1. Find the area of the rectangle.

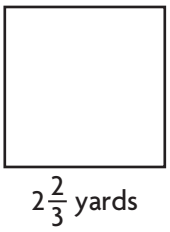


$A =$ _____ $\times$ _____

$A =$ _____

The area is _____ square inch.

2. Find the perimeter of the square.



$P =$ _____ $\times$ _____

$P =$ _____

The perimeter is _____ yards.

3. A rectangle has a perimeter of 12 inches. If the width of the rectangle is $4\frac{4}{5}$ inches, what is the length of the rectangle? Explain how you know.

_____

_____

4. A square has a perimeter of $\frac{4}{3}$ feet. What is the length of each side of the square? Explain how you know.

_____

_____

Problem Solving Real World

5. Aurelio wants to put a border around his flower bed. The flower bed measures $2\frac{1}{5}$ meters by $3\frac{1}{4}$ meters. He has 10 meters of border. How much more border does he need to put a border around his flower bed?

_____

_____

_____

6. Aurelio wants to put a new layer of mulch on his flower bed that measures $2\frac{1}{5}$ meters by $3\frac{1}{4}$ meters. He finds the area of the flower bed so he knows how much mulch to buy. If one bag of mulch covers 2 square meters, how many bags of mulch will Aurelio need? Explain.

_____

_____

_____

_____

Lesson Check

Fill in the bubble completely to show your answer.

7. Chantal buys two small rugs for her kitchen. One rug measures $3\frac{1}{2}$ feet by $5\frac{1}{4}$ feet. The other rug measures $4\frac{1}{12}$ feet by $6\frac{1}{3}$ feet. What is the area of the part of the kitchen the two rugs will cover?

- (A) $44\frac{17}{72}$ square feet
- (B) $28\frac{19}{24}$ square feet
- (C) $57\frac{14}{24}$ square feet
- (D) $9\frac{15}{72}$ square feet

8. Isaac is painting a wall that is $9\frac{1}{4}$ feet $\times$ $18\frac{3}{4}$ feet. So far, he has painted a part of the wall that is a rectangle with area $39\frac{7}{16}$ square feet. What is the area of the part of the wall that Isaac has left to paint?

- (A) 190 square feet
- (B) 134 square feet
- (C) 22 square feet
- (D) 151 square feet

9. A soccer field has a length of $98\frac{1}{12}$ yards and a width of $55\frac{7}{8}$ yards. Which equation can you use to find the perimeter of the soccer field?

- (A) $P = 98\frac{1}{12} \times 55\frac{7}{8}$
- (B) $P = 98\frac{1}{12} + 55\frac{7}{8} + 98\frac{1}{12} + 55\frac{7}{8}$
- (C) $P = 98\frac{1}{12} + 55\frac{7}{8}$
- (D) $P = 55\frac{7}{8} \times 4$

10. A square classroom has a perimeter of 30 yards. What is the length of each side of the classroom?

- (A) 15 yards
- (B) 20 yards
- (C) $3\frac{3}{4}$ yards
- (D) $7\frac{1}{2}$ yards

Spiral Review

11. Benedict deposits $28.75 into his savings account every month. How much will he have deposited into his savings account in 9 months?

_____

12. Divide.

$324.78 \div 3$

_____

Name _____

Explore Area and Mixed Numbers

I Can use a unit tile to find the area of a rectangle with fractional side lengths.

Florida's B.E.S.T.

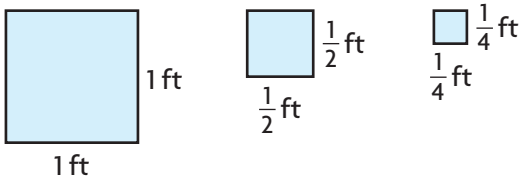
- **Fractions** 5.FR.2.2
- **Algebraic Reasoning** 5.AR.1.2
- **Geometric Reasoning** 5.GR.2.1
- **Mathematical Thinking & Reasoning** MTR 1.1, MTR.3.1, MTR 4.1, MTR.5.1, MTR.6.1

Investigate

You can use square tiles with side lengths that are unit fractions to find the area of a rectangle.

Li wants to cover the rectangular floor of her closet with tile. The floor is $2\frac{1}{2}$ feet by $3\frac{1}{2}$ feet. She wants to use the fewest tiles possible and doesn't want to cut any tiles. The tiles come in three sizes: 1 foot by 1 foot, $\frac{1}{2}$ foot by $\frac{1}{2}$ foot, and $\frac{1}{4}$ foot by $\frac{1}{4}$ foot. Choose the tile that Li should use. What is the area of the closet floor?

A. Choose the largest tile Li can use to tile the floor of the closet and avoid gaps or overlaps.

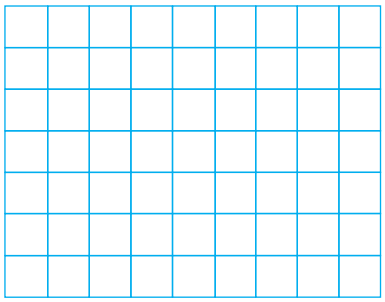


- Which square tile should Li choose? Explain. _____

_____

_____

B. On the grid, let each square represent the dimensions of the tile you chose. Then draw a diagram of the floor.



C. Count the squares in your diagram.

- How many squares cover the diagram?

  _____ × _____ , or _____ squares

- What is the area of the tile you chose? _____

- Since 1 square on your diagram represents an area of _____ square foot,

  the area represented by _____ squares is _____ × _____ ,

  or _____ square feet.

So, the area of the floor written as a mixed number

is _____ square feet.

Math Talk

MTR 3.1 Complete tasks with mathematical fluency.

Explain how you found the area of the tile you chose.

Draw Conclusions

1. Using the formula for area, write a multiplication expression that could be used to find the area of the floor.

_____

2. MTR Rewrite the expression with fractions greater than 1 and calculate the area. Is it the same as what you found using the model?

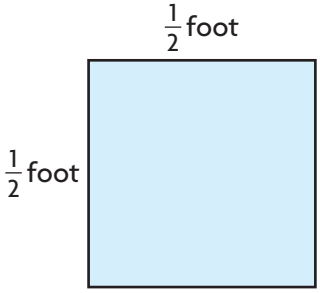
_____

3. How many $\frac{1}{4}$ foot by $\frac{1}{4}$ foot tiles would Sonja need to cover one $\frac{1}{2}$ foot by $\frac{1}{2}$ foot tile? _____

4. How could you find the number of $\frac{1}{4}$ foot by $\frac{1}{4}$ foot tiles needed to cover the same closet floor?

_____

_____



Make Connections

Sometimes it is easier to multiply mixed numbers if you break them apart into whole numbers and fractions.

Use an area model to solve. $1\frac{3}{5} \times 2\frac{3}{4}$

STEP 1 Rewrite each mixed number as the sum of a whole number and a fraction.

$1\frac{3}{5} =$ _____ $2\frac{3}{4} =$ _____

STEP 2 Draw an area model to show the original multiplication problem.

STEP 3 Draw dashed lines and label each section to show how you broke apart the mixed numbers in Step 1.

STEP 4 Find the area of each section.

STEP 5 Add the area of each section to find the total area of the rectangle.

_____

So, the product of $1\frac{3}{5} \times 2\frac{3}{4}$ is _____.

Name _____

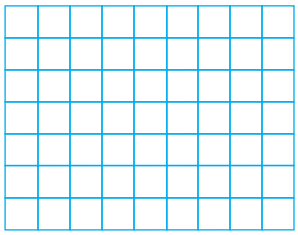
Share and Show

Math Board

Use the grid to find the area. Let each square represent $\frac{1}{3}$ meter by $\frac{1}{3}$ meter.

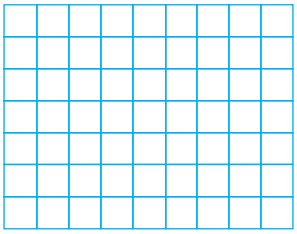
1. $1\frac{2}{3} \times 1\frac{1}{3}$

- Draw a diagram to represent the dimensions.
- How many squares cover the diagram? _____
- What is the area of each square? _____
- What is the area of the diagram? _____



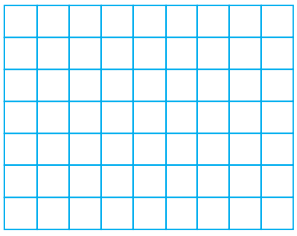
Use the grid to find the area. Let each square represent $\frac{1}{4}$ foot by $\frac{1}{4}$ foot.

2. $1\frac{3}{4} \times 1\frac{2}{4} =$ _____



The area is _____ square feet.

3. $1\frac{1}{4} \times 1\frac{1}{2} =$ _____



The area is _____ square feet.

Use an area model to solve.

4. $1\frac{1}{3} \times 2\frac{1}{2}$

_____

5. $1\frac{3}{8} \times 2\frac{1}{2}$

_____

6. $1\frac{1}{9} \times 1\frac{2}{3}$

_____

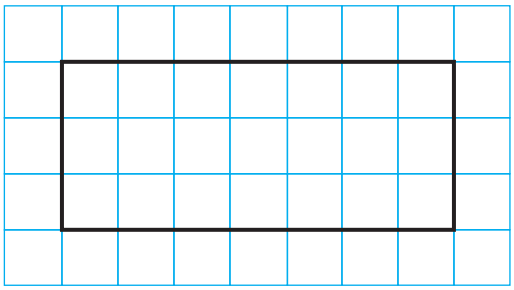
7. MTR Explain how finding the area of a rectangle with whole-number side lengths compares to finding the area of a rectangle with fractional side lengths.

_____

_____

Problem Solving · Applications

8. Terrance is designing a garden. He drew this diagram of his garden. Pose a problem using mixed numbers that can be solved using his diagram.



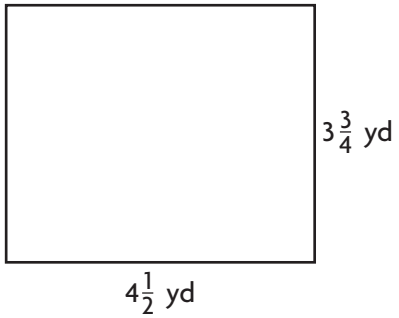
MATH on the Spot

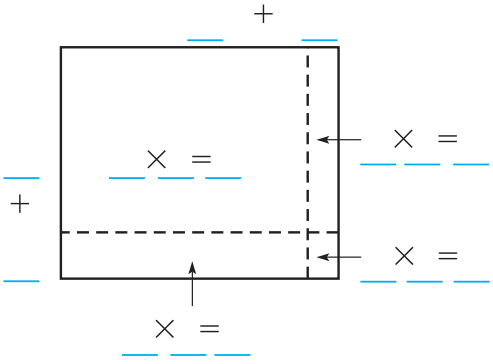
Pose a Problem.

Solve your problem.

9. Matteo's bedroom is a rectangle that measures $3\frac{1}{3}$ yards by $4\frac{1}{2}$ yards. His dad buys two area rugs that each have a length of 4 yards. One rug has an area of 16 square yards. The other is 12 square yards. Which rug will fit Matteo's room? Explain.

10. Nancy's garden has the dimensions shown. She needs to find the area of the garden so she knows how much topsoil to buy. Complete the area model below to find the area.





The area of the garden is _____ square yards.

Name _____

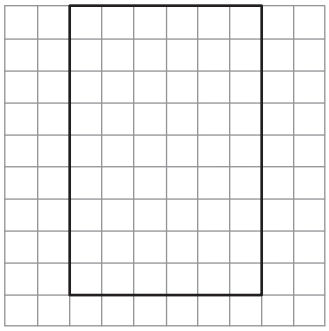
Explore Area and Mixed Numbers

Go Online
Interactive Examples

Use the grid to find the area.

1. Let each square represent $\frac{1}{4}$ unit by $\frac{1}{4}$ unit.

$2\frac{1}{4} \times 1\frac{1}{2} =$ $3\frac{3}{8}$



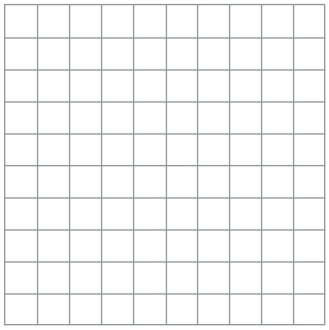
54 squares cover the diagram.

Each square is $\frac{1}{16}$ square unit.

The area of the diagram is $54 \times \frac{1}{16} = \frac{54}{16} = 3\frac{6}{18}$ square units.

2. Let each square represent $\frac{1}{3}$ unit by $\frac{1}{3}$ unit.

$1\frac{2}{3} \times 2\frac{1}{3} =$ _____



The area is _____ square units.

Use an area model to solve.

3. $1\frac{3}{4} \times 2\frac{1}{2}$

4. $2\frac{2}{3} \times 1\frac{1}{3}$

5. $3\frac{3}{4} \times 2\frac{1}{2}$

Problem Solving Real World

6. Ava's bedroom rug is $2\frac{3}{4}$ feet long and $2\frac{1}{2}$ feet wide. What is the area of the rug?

7. A painting is $2\frac{2}{3}$ feet long and $1\frac{1}{2}$ feet high. What is the area of the painting?

8. WRITE Math Draw a shape with fractional side lengths. Describe how you will find its area.

Lesson Check

9. The base of a fountain is rectangular. Its dimensions are $1\frac{2}{3}$ feet by $2\frac{2}{3}$ feet. What is the area of the base of the fountain?

10. DeAndre's living room floor is covered with carpet tiles. Each tile is $1\frac{1}{2}$ feet long by $2\frac{3}{5}$ feet wide. What is the area of one tile?

Spiral Review

11. Raven earned $18 babysitting on Friday and $20 babysitting on Saturday. On Sunday, she spent half of the money. Write an expression to match the words.

12. A grocery store clerk is putting cans of soup on the shelves. She has 12 boxes, which each contain 24 cans of soup. Altogether, how many cans of soup will the clerk put on the shelves?

13. What is the best estimate for the quotient $5{,}397 \div 62$?

14. There are 45 vehicles in a parking lot. Three fifths of the vehicles are minivans. How many of the vehicles in the parking lot are minivans?

Name _____

Chapter 13

Chapter Review

1. The park has a space they want to turn into a basketball court. They need to find the area and perimeter of the space to determine how much cement and fencing is needed.

What is the area and perimeter of the space for the new basketball court?

Perimeter: _____

Area: _____

2. For problems 2a–2d, select True or False.

a. A rectangle with a width of 5.8 meters and a length of 7.1 meters has an area of 25.8 square meters. ○ True ○ False

b. A rectangle with a width of $6\frac{2}{5}$ inches and a length of $2\frac{1}{8}$ inches has an area of $13\frac{3}{5}$ square inches. ○ True ○ False

c. A rectangle with a width of 7.25 feet and a length of 8.4 feet has a perimeter of 31.3 feet. ○ True ○ False

d. A rectangle with a width of $4\frac{1}{8}$ yards and a length of $9\frac{1}{2}$ yards has a perimeter of $39\frac{3}{16}$ yards. ○ True ○ False

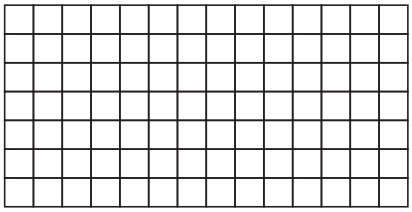
3. Mr. Gomez wants to put carpet in his rectangular living room. The width of his living room is $9\frac{1}{2}$ feet and the length is $15\frac{1}{4}$ feet. What is the area of the living room?

_____ square feet

4. Hannah is tiling a section of her bathroom wall with tiles that are $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. The section of the wall is $2\frac{1}{2}$ feet tall and $4\frac{1}{2}$ feet wide.

Part A

Let each square of the grid below represent $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. Draw a rectangle on the grid to represent the section of the wall.



Part B

What is the area of the section of wall? Explain how you found your answer.

_____ square feet.

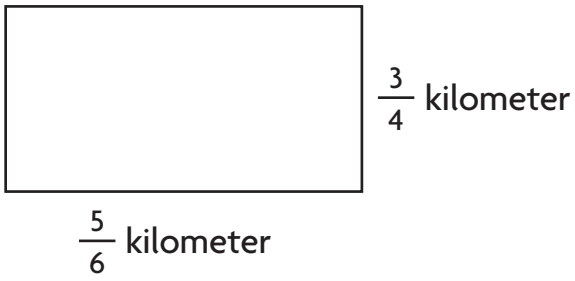
_____

_____

_____

_____

5. What is the area of the rectangle?



Ⓐ $\frac{5}{8}$ square kilometer

Ⓑ $1\frac{1}{4}$ square kilometers

Ⓒ $\frac{17}{12}$ square kilometers

Ⓓ $3\frac{1}{6}$ square kilometers

6. What is the area of a rectangle with a width of 3.9 millimeters and a length of 2.1 millimeters?

Ⓐ 6 square millimeters

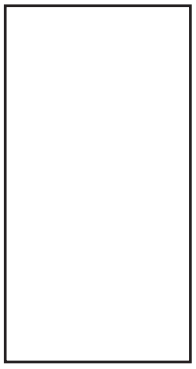
Ⓑ 8.19 square millimeters

Ⓒ 12 square millimeters

Ⓓ 16.38 square millimeters

Name _____

7. What is the perimeter of the rectangle?



Ⓐ 110.04 inches

Ⓑ 55.02 inches

Ⓒ 38.44 inches

Ⓓ 19.22 inches

8. Renee's desk has a rectangular top with a length of $3\frac{1}{4}$ feet and a width of $6\frac{5}{12}$ feet. What is the perimeter and area of the top of Renee's desk?

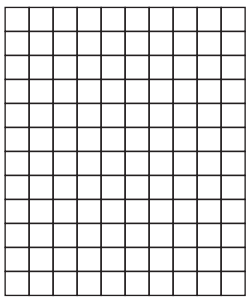
Perimeter: _____

Area: _____

9. Quinton made a rectangular piece of art by connecting tiles that are $\frac{1}{3}$ foot by $\frac{1}{3}$ foot. The art piece is $3\frac{1}{3}$ feet tall and $2\frac{2}{3}$ feet wide.

Part A

Let each square of the grid below represent $\frac{1}{3}$ foot by $\frac{1}{3}$ foot. Draw a rectangle on the grid to represent the art piece.



Part B

What is the area of the art piece? Explain how you found your answer.

_____ square feet

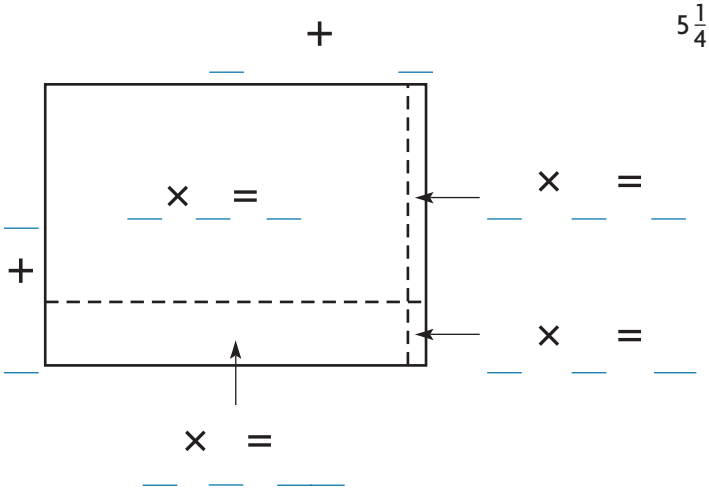
_____

_____

_____

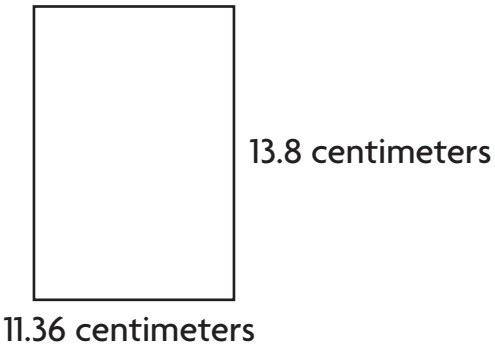
_____

10. Caleb's family room has the dimensions shown. He needs to find the area of the room so that he knows how much carpet to buy. Complete the area model below to find the area of the family room.



area of the room = _____ square yards

11. What is the perimeter of the rectangle?



Ⓐ 25.16 centimeters

Ⓑ 48.88 centimeters

Ⓒ 50.32 centimeters

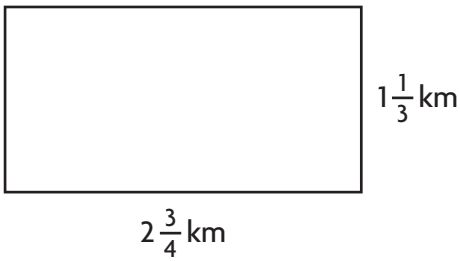
Ⓓ 156.768 centimeters

12. Gavin is putting a border around the edges of a rectangular bulletin board. The bulletin board has a length of 4.6 feet and a width of 5.3 feet. How many feet of border will Gavin need?

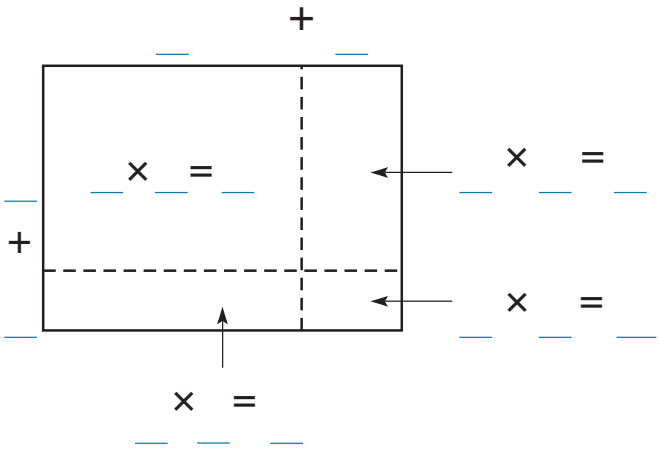
_____ feet

Name _____

13. A farmer's field has the dimensions shown. He needs to find the area of the field so that he knows how much seed to buy.



Complete the area model below to find the area of the field.

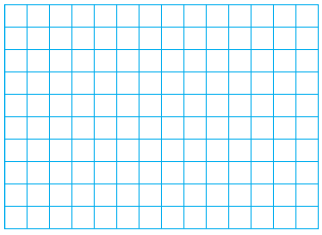


area of the field = _____ square kilometers

14. Peggy is making a quilt using panels that are $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. The quilt is $5\frac{1}{2}$ feet long and 4 feet wide.

Part A

Let each square of the grid below represent $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. Draw a rectangle on the grid to represent the quilt.

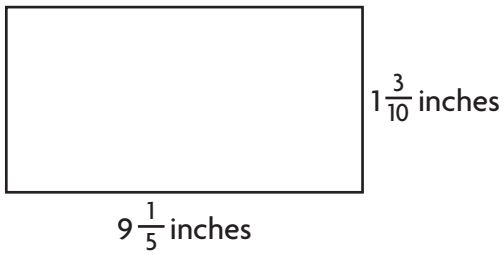


Part B

What is the area of the quilt? Explain how you found your answer.

_____ square feet

15. What is the perimeter and area of the rectangle?.



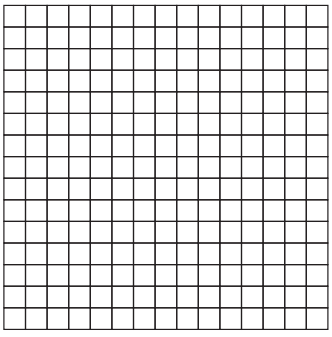
Perimeter: _____

Area: _____

16. Tiffany made a rectangular wall hanging using squares of fabric that are $\frac{1}{4}$ foot by $\frac{1}{4}$ foot. The wall hanging is $2\frac{3}{4}$ feet tall and $3\frac{1}{4}$ feet wide.

Part A

Let each square of the grid below represent $\frac{1}{4}$ foot by $\frac{1}{4}$ foot. Draw a rectangle on the grid to represent the art piece.



Part B

What is the perimeter of the wall hanging? Explain how you found your answer.

_____ feet

Part C

What is the area of the wall hanging? Explain how you found your answer.

_____ square feet.