

**Unit 6.1, Lesson 1: Practice Problems**

Name \_\_\_\_\_

**Warm-Up**Select **all** the numbers that are equivalent to 12.

$4 \cdot 3$

$2 + 6$

$24 \cdot \frac{1}{2}$

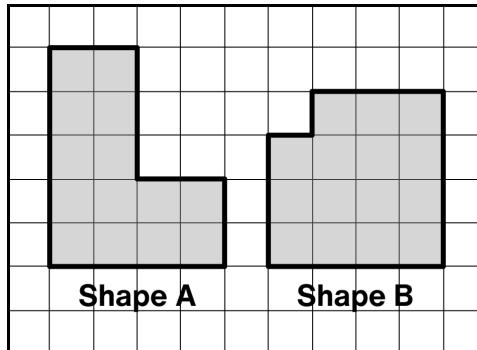
$24 \cdot 2$

$4 + 4 \cdot 2$

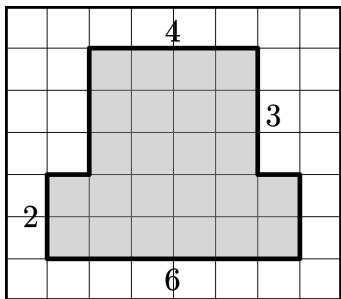
**Practice**

1. Which shape has a greater area?

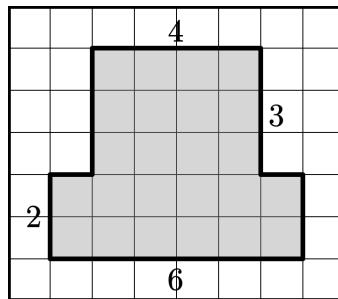
Show or explain how you know.



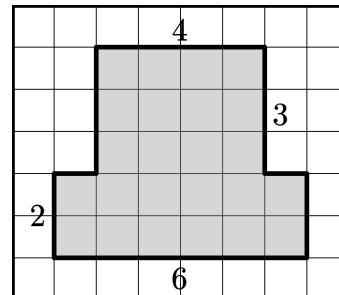
- 2.1 Determine the area of this shape.
- 
- Write your answer in square units.



- 2.2 Describe or show another way to determine the area of this shape.



- 2.3 Describe or show how you could change this shape so it has an area of 26 square units.

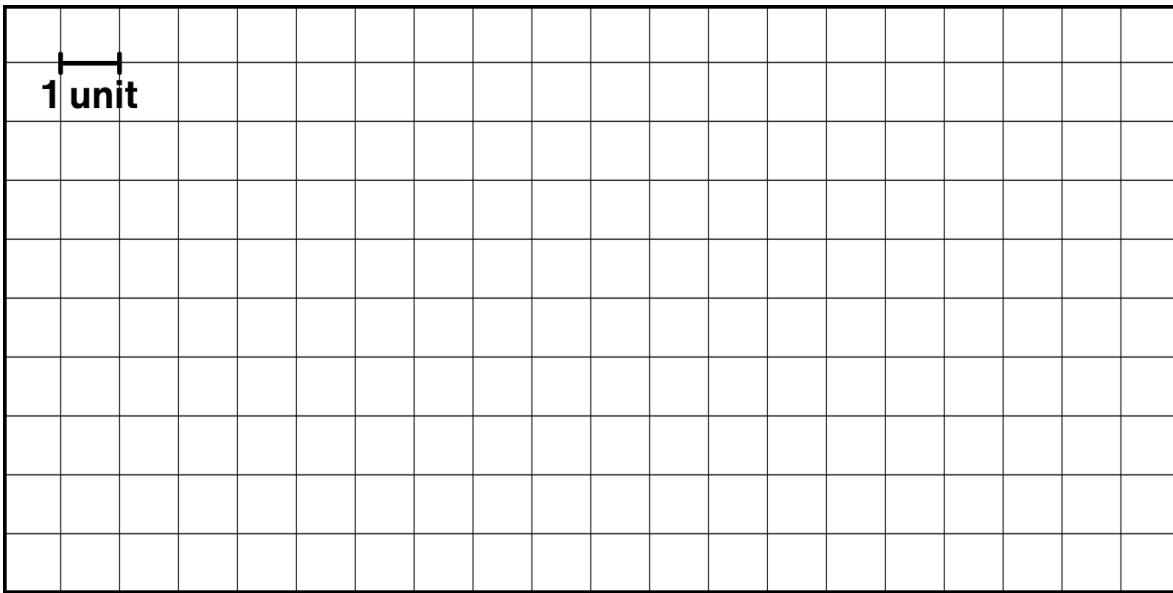




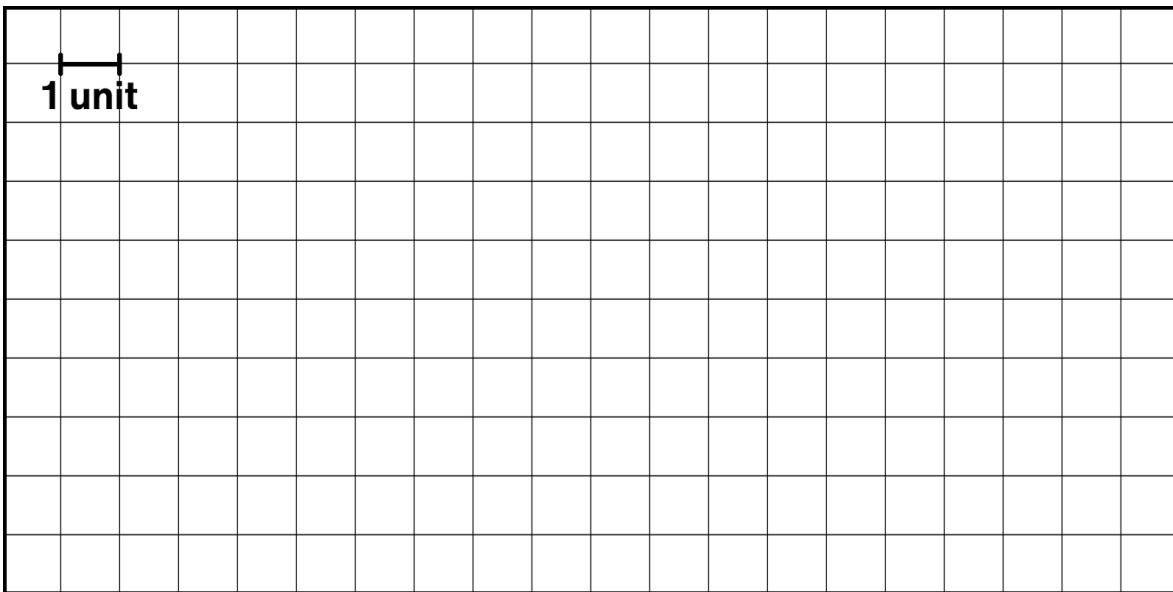
## Unit 6.1, Lesson 1: Practice Problems

### Explore

Draw as many different shapes as you can that each have an area of 12 square units.



Draw a shape that looks like an animal that has an area of 40 square units. Write the name of the animal. Hint: Use rectangles and triangles to create your design.

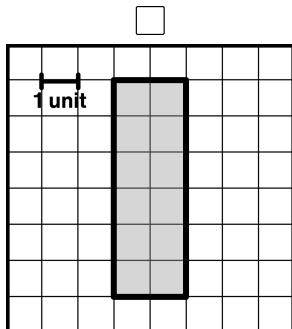
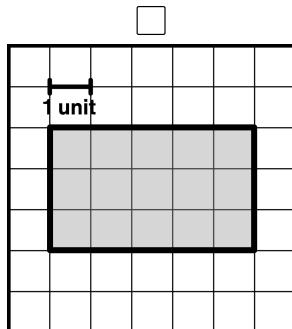
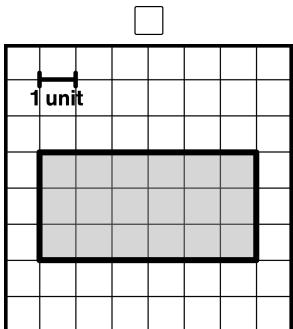
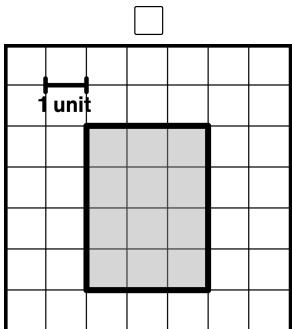


### Reflect

1. Put a star next to the question you understood best.
2. Use the space below to ask one question you have or to share something you are proud of.

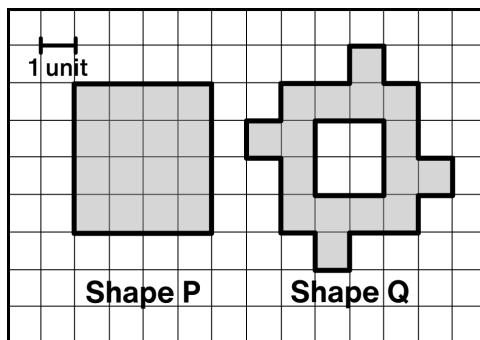
## Warm-Up

Select all the rectangles with an area of 12 square units.



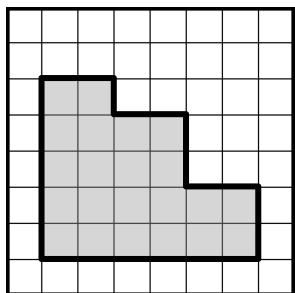
## Practice

- Which shape has a larger area?  
Show or explain how you know.

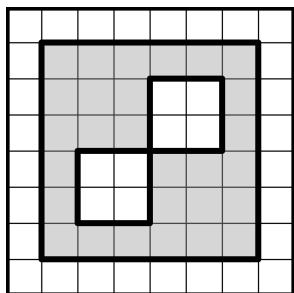


Determine the area of each shape. Each small square represents one square unit.

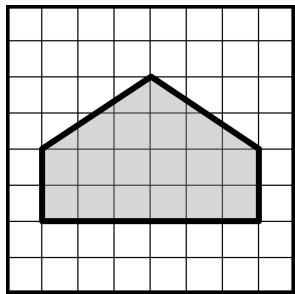
2.1



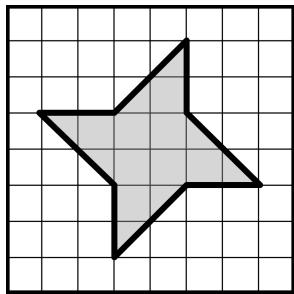
2.2



2.3



2.4

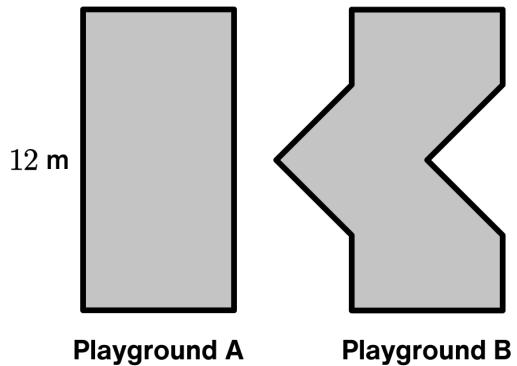


**Unit 6.1, Lesson 2: Practice Problems**

Here are outlines of two playgrounds.

- 3.1 The area of Playground A is 72 square meters.

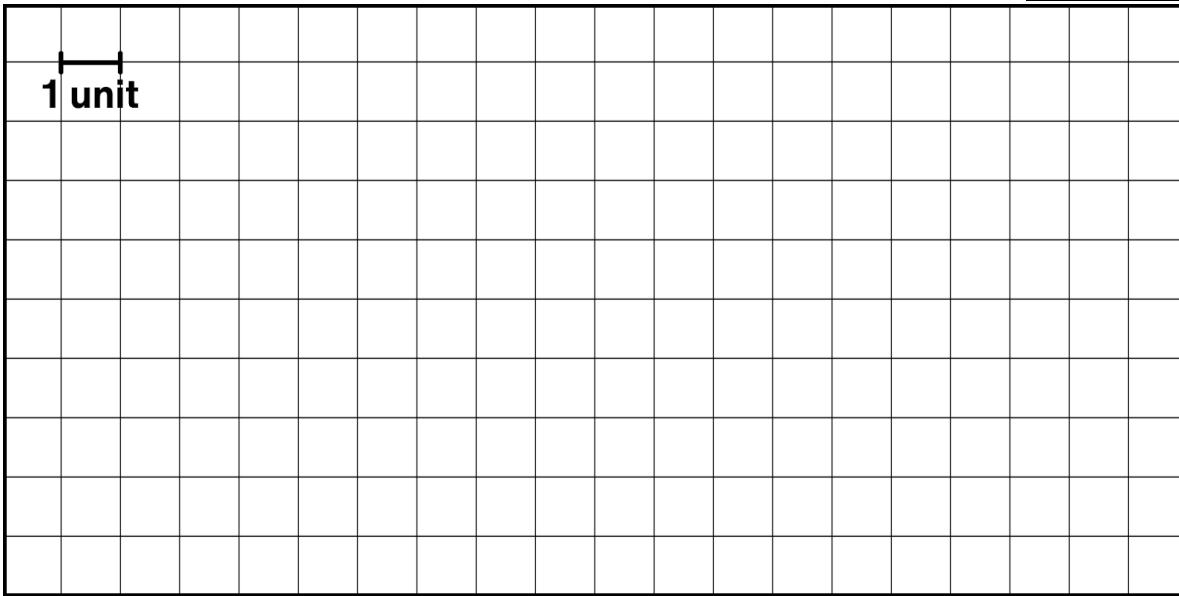
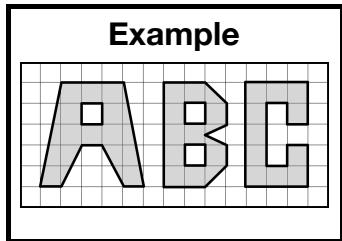
If its length is 12 meters, what is its width?



- 3.2 Fabiana claims that Playground A and B have the same area. Do you agree? Explain your reasoning.

**Explore**

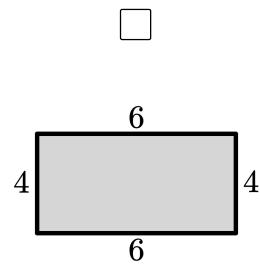
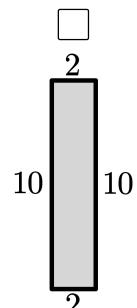
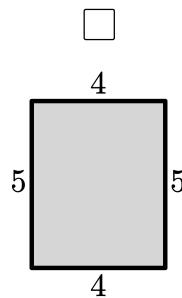
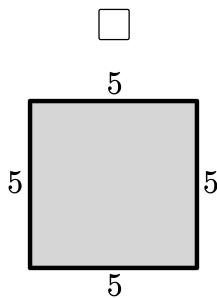
1. Draw your initials in block lettering.
2. Calculate the area of each initial.

**Reflect**

1. Put a circle next to a question you are still curious about.
2. Use the space below to ask one question you have or to share something you are proud of.

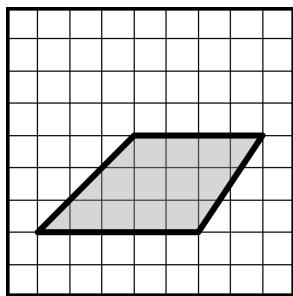
**Unit 6.1, Lesson 3: Practice Problems**

Name \_\_\_\_\_

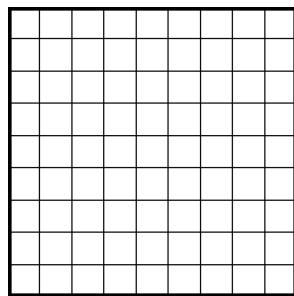
**Warm-Up**Select **all** the rectangles with an area of 20 square units.**Practice**

In this practice set, each small square in the grid represents 1 square centimeter.

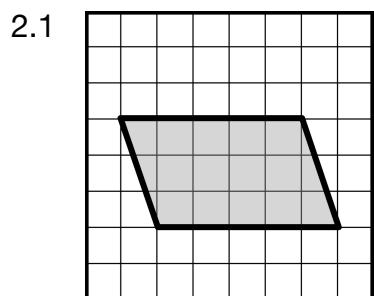
- 1.1 Explain how you know this quadrilateral is
- not**
- a parallelogram.



- 1.2 Draw your own parallelogram. Label its base and height.



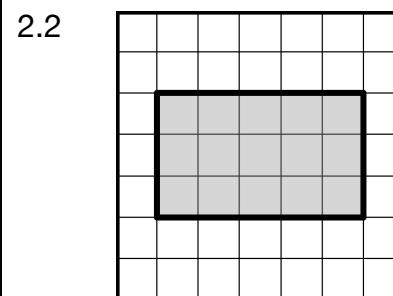
Determine a base and height for each parallelogram. Then determine its area. Use appropriate units.



Base: \_\_\_\_\_

Height: \_\_\_\_\_

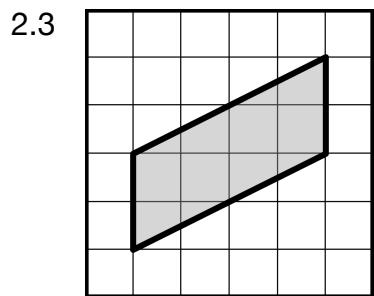
Area: \_\_\_\_\_



Base: \_\_\_\_\_

Height: \_\_\_\_\_

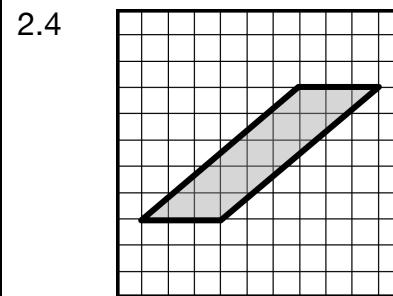
Area: \_\_\_\_\_



Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_



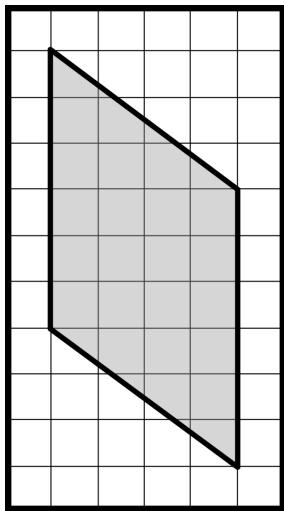
Base: \_\_\_\_\_

Height: \_\_\_\_\_

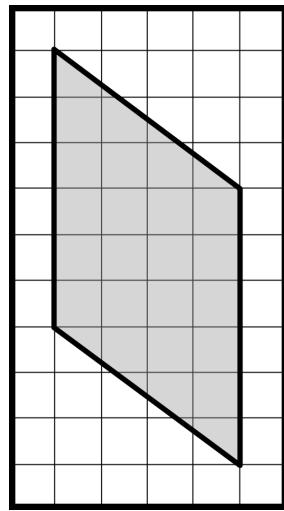
Area: \_\_\_\_\_

**Unit 6.1, Lesson 3: Practice Problems**

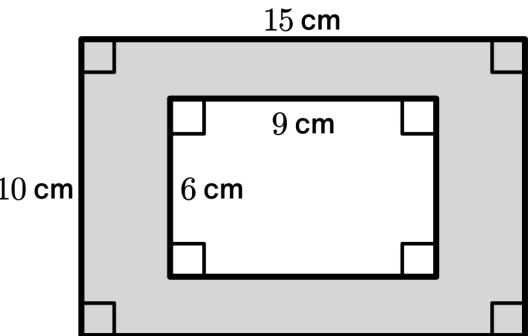
- 3.1 Determine the area of this parallelogram. Write your answer in square units.



- 3.2 Show or describe another way to determine the area of this parallelogram.

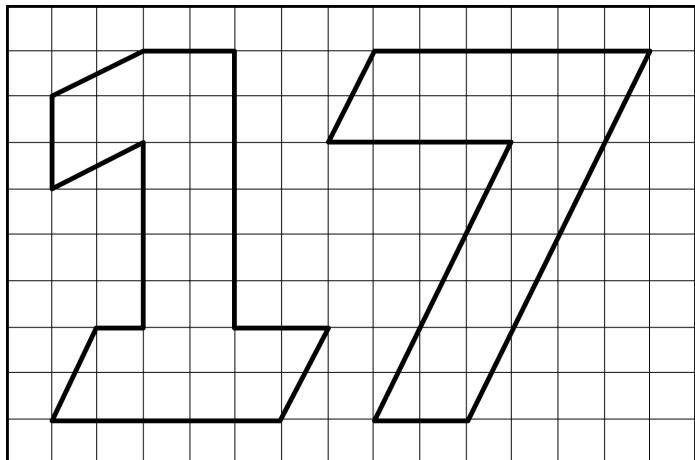


4. Calculate the area of the shaded region. Show all of your thinking.



## Explore

1. Do you have a favorite number? If so, what is it?
2. Calculate the area of Ayaan's favorite number. Show all of your thinking.

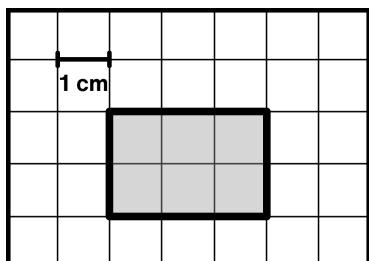


## Reflect

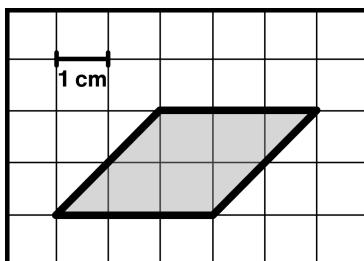
1. Put a heart next to the question you are most proud of.
2. Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

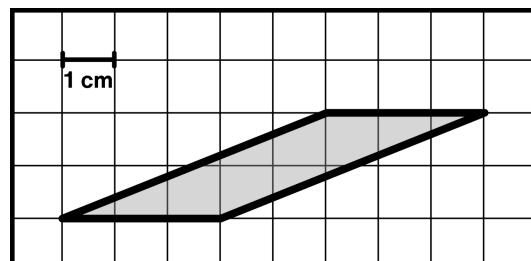
Calculate the area of each parallelogram in square centimeters.



Area: \_\_\_\_\_



Area: \_\_\_\_\_

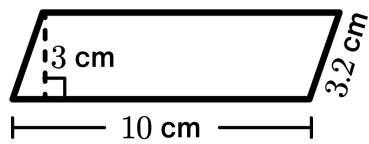


Area: \_\_\_\_\_

**Practice**

Determine a base and height for each parallelogram. Then determine its area. Use appropriate units.

1.1

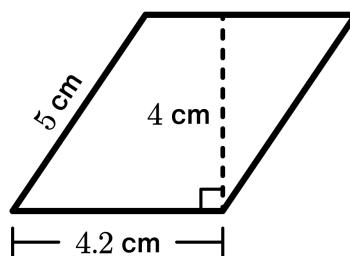


Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.2

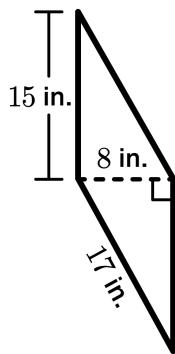


Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.3



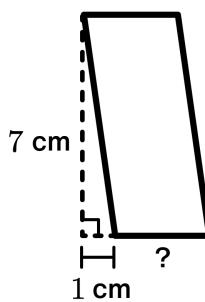
Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.4

The area is 21 square units. What are the base and height?

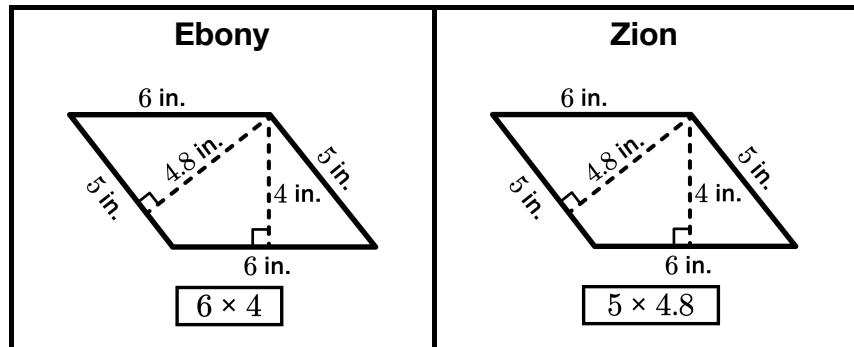


Base: \_\_\_\_\_

Height: \_\_\_\_\_

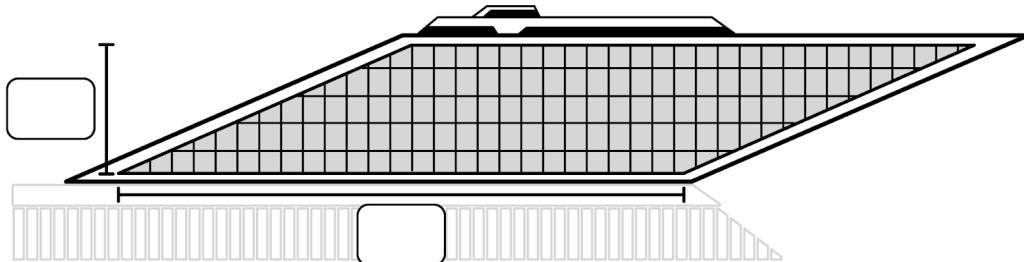
Area: 21 square units

2. Ebony and Zion each calculated the area of the parallelogram. Who is correct? Explain your reasoning.

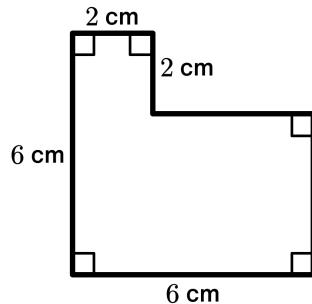


**Unit 6.1, Lesson 4: Practice Problems**

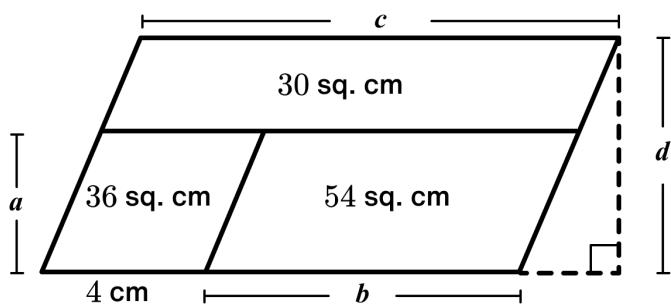
The Dockland Building in Hamburg, Germany, is shaped like a parallelogram. One side of the building is 86 meters long and 55 meters high and is entirely covered in windows.



- 3.1 Label the base and height in the blanks.
- 3.2 What is the approximate area a window washer would need to wash?
4. Calculate the area of this shape. Show all of your thinking.

**Explore**

Determine as many unknown measurements as you can.



Variable	Length (cm)
$a$	
$b$	
$c$	
$d$	

**Reflect**

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.

**Unit 6.1, Lesson 5: Practice Problems**

Name \_\_\_\_\_

**Warm-Up**Select **all** of the expressions that have the same value as  $8 \div 2$ .

$\frac{8}{2}$

$8 \cdot 2$

$2 \div 8$

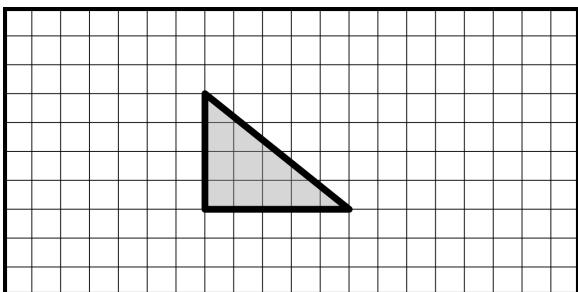
$\frac{1}{2} \cdot 8$

$\frac{2}{8}$

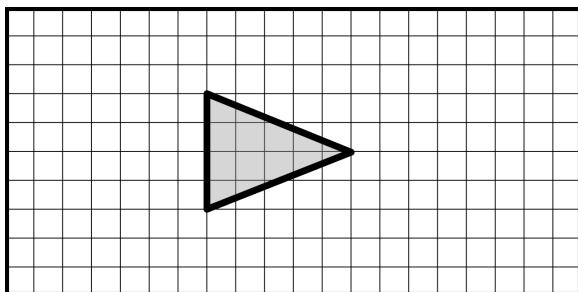
**Practice**

Determine the area of each triangle in square units.

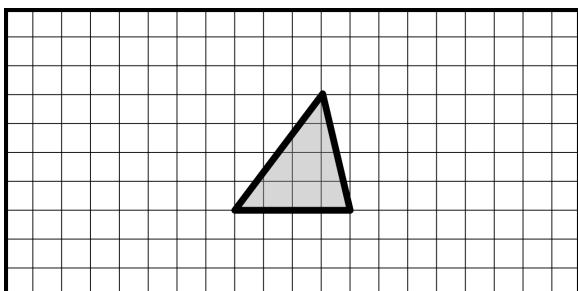
1.1 Area: \_\_\_\_\_



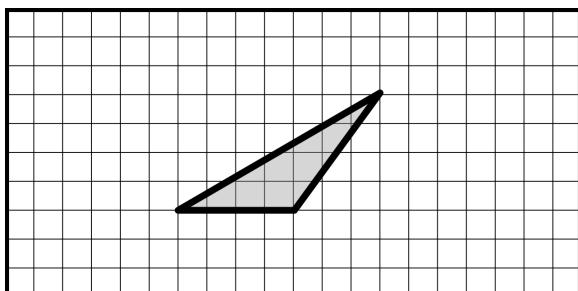
1.2 Area: \_\_\_\_\_



1.3 Area: \_\_\_\_\_



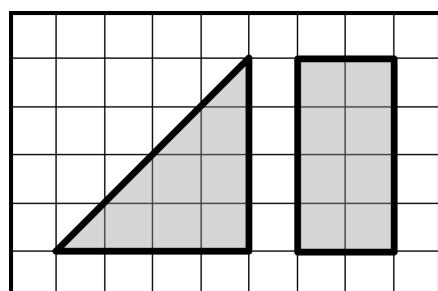
1.4 Area: \_\_\_\_\_



1.5 How are the areas of 1.1 and 1.2 related? Why does this make sense to you?

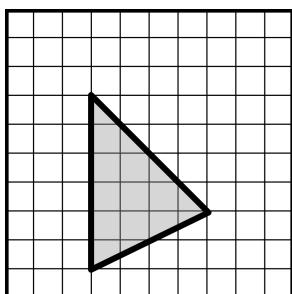
2. Aki thinks that these two shapes have the same area.

Is Aki correct? Explain your reasoning.

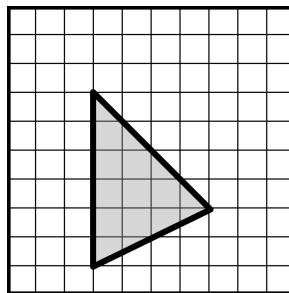


**Unit 6.1, Lesson 5: Practice Problems**

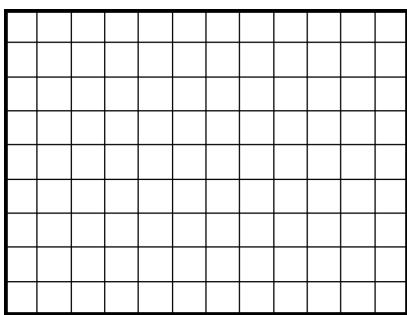
- 3.1 Determine the area of this triangle.



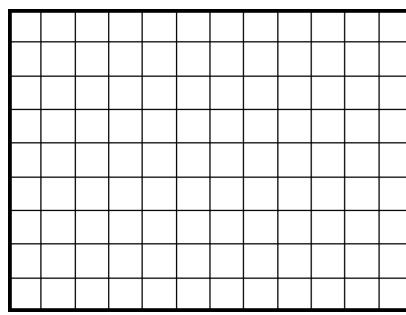
- 3.2 Show or describe another way to determine the area.



4. Draw two different parallelograms with equal areas. Label the base and height of each.



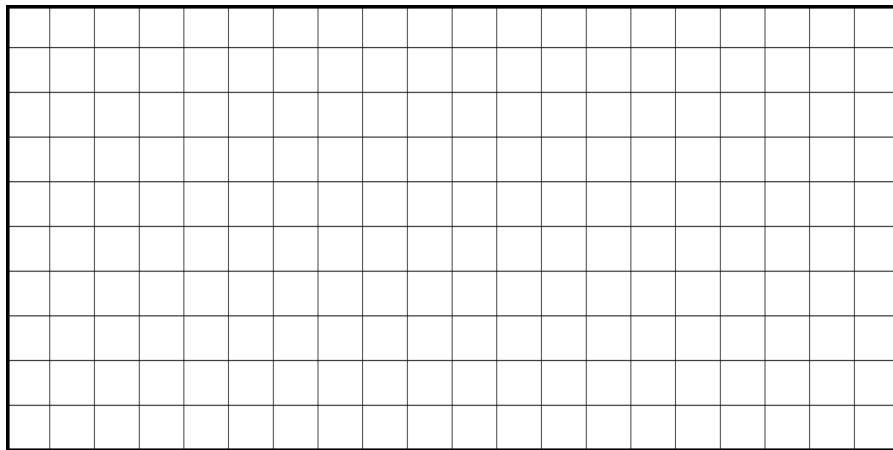
Base: \_\_\_\_\_ Height: \_\_\_\_\_



Base: \_\_\_\_\_ Height: \_\_\_\_\_

## Explore

Draw a design using triangles. Then calculate the area of your design.



## Reflect

1. Put a heart next to the question you are most proud of.
2. Use the space below to ask one question you have or to share something you are proud of.

## Unit 6.1, Lesson 6: Practice Problems

Name \_\_\_\_\_

**Warm-Up**Select **all** of the expressions that have the same value as  $10 \div 5$ .

$\frac{10}{5}$

$10 \cdot 5$

$\frac{1}{5} \cdot 10$

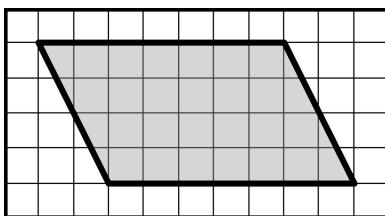
$10 \div 2$

$\frac{10}{2}$

**Practice**

Determine a base and a height for each shape. Then determine its area. Use appropriate units.

1.1

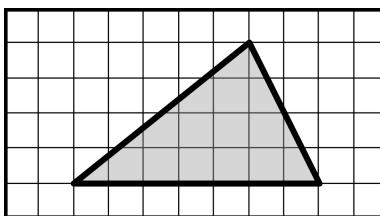


Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.2

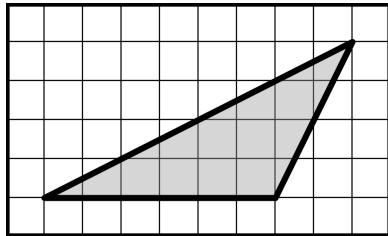


Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.3

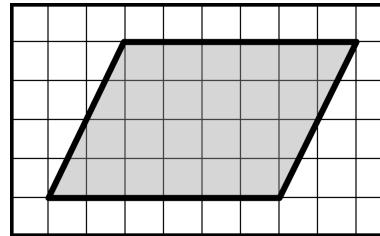


Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

1.4



Base: \_\_\_\_\_

Height: \_\_\_\_\_

Area: \_\_\_\_\_

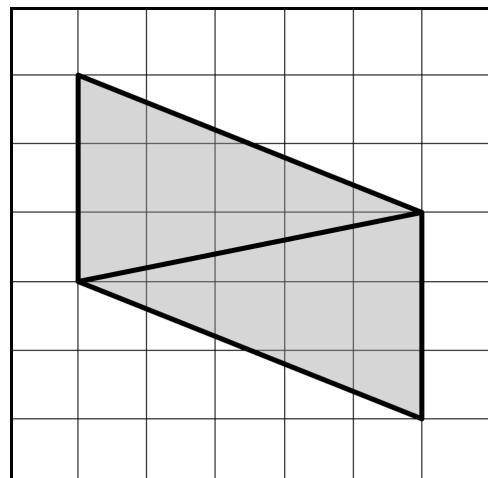
1.5 How are the areas of 1.1 and 1.2 related? Why does this make sense to you?

Here is a parallelogram with a line connecting two corners.

2.1 What is the area of the parallelogram?

2.2 What is the area of the top triangle?

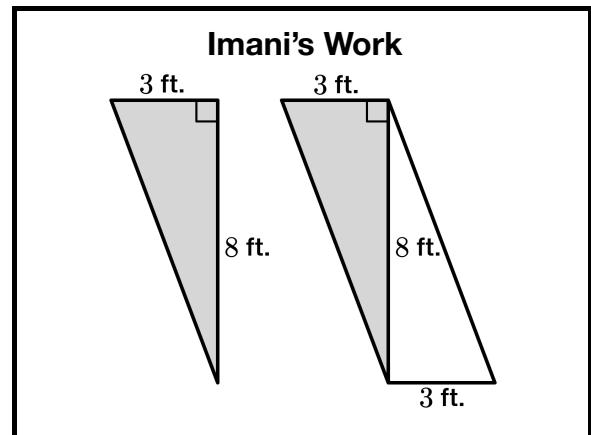
2.3 What is the area of the bottom triangle?



**Unit 6.1, Lesson 6: Practice Problems**

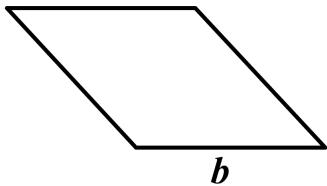
Imani was trying to figure out the area of the triangle on the left. Here is her work.

3. Explain how Imani might use their parallelogram to calculate the area of the triangle.

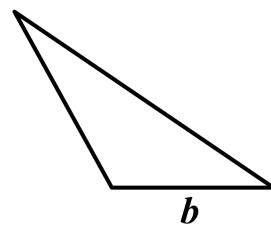


Each shape has a base labeled  $b$ . Draw a line segment that shows a possible height.

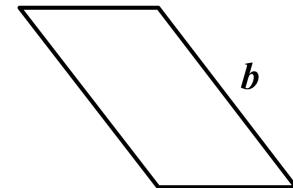
4.1



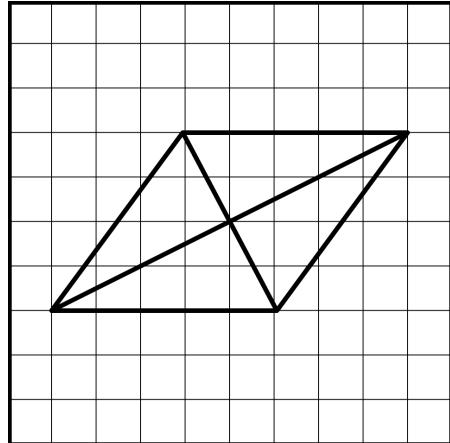
4.2



4.3

**Explore**

Determine the area of as many different shapes in this image as you can.

**Reflect**

1. Put a star next to the question you understood best.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the value of each expression.

$$8 \cdot 6 = \underline{\hspace{2cm}}$$

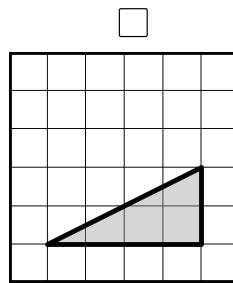
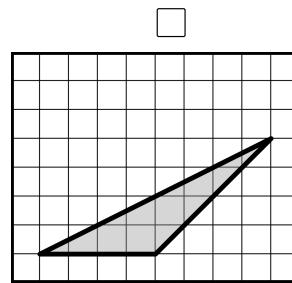
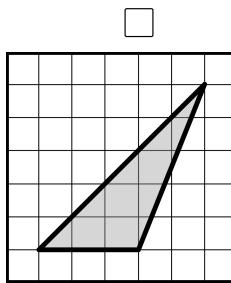
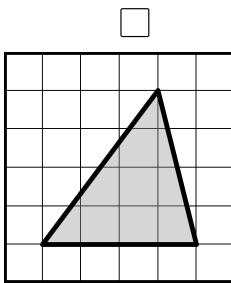
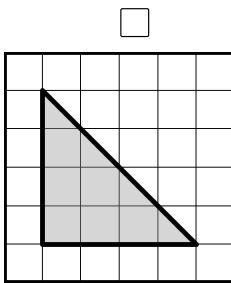
$$\frac{1}{2} \cdot 8 \cdot 6 = \underline{\hspace{2cm}}$$

$$4 \cdot 10 \div 2 = \underline{\hspace{2cm}}$$

$$\frac{4 \cdot 10}{2} = \underline{\hspace{2cm}}$$

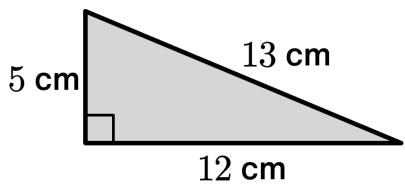
## Practice

1. Select **all** of the triangles that have an area of 8 square units.

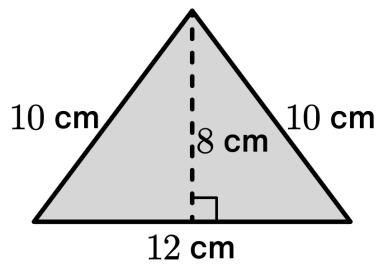


Calculate the area of each triangle. Use appropriate units.

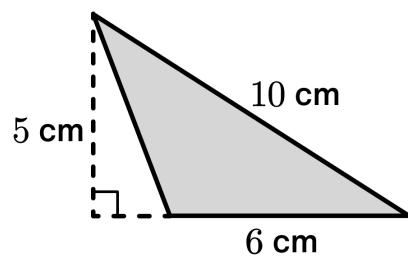
2.1 Area: \_\_\_\_\_



2.2 Area: \_\_\_\_\_



2.3 Area: \_\_\_\_\_

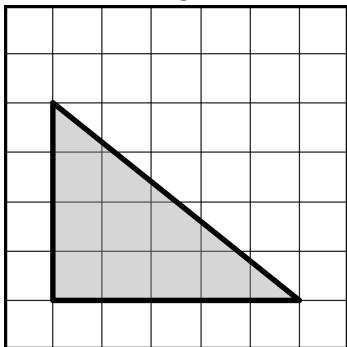


**Unit 6.1, Lesson 7: Practice Problems**

3.1 Draw a different triangle with the same base and height as Triangle 1.

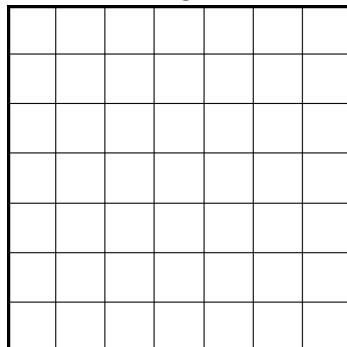
3.2 Calculate the area of each triangle in square units.

Triangle 1



Area: \_\_\_\_\_

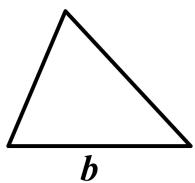
Triangle 2



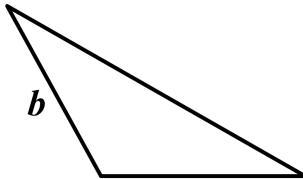
Area: \_\_\_\_\_

Each triangle has a base labeled  $b$ . Draw a line segment on each triangle that shows a possible height.

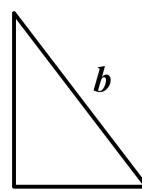
4.1



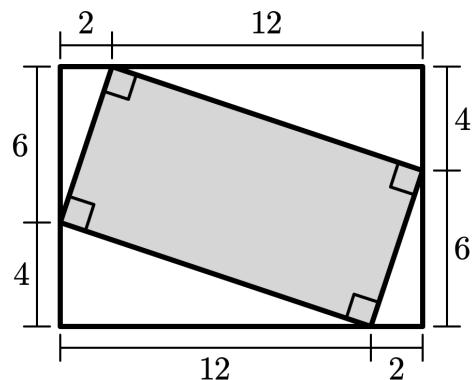
4.2



4.3

**Explore**

Determine the area of as many different shapes in this image as you can.

**Reflect**

1. Put a question mark next to a question you were feeling stuck on.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Complete each sentence with a number that makes the equation true.

$5 \cdot \underline{\quad} = 15$

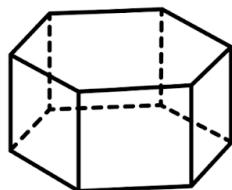
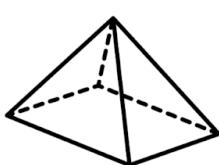
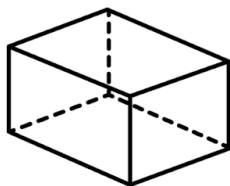
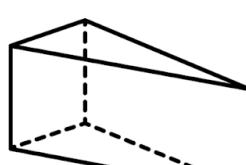
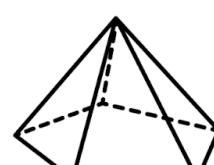
$7 \cdot \underline{\quad} = 28$

$28 \cdot \underline{\quad} = 7$

$12 \cdot \underline{\quad} = 3$

## Practice

Use these five polyhedra to answer the questions below.

**A****B****C****D****E**

1.1 How many faces does A have?

1.3 How many faces does D have?

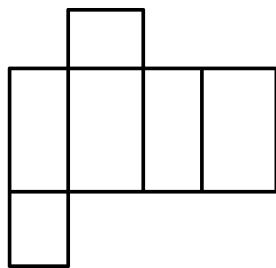
1.2 Describe or draw each of A's faces.

1.4 Describe or draw each of D's faces.

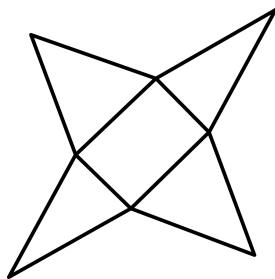
1.5 Write the letter of each polyhedron in the appropriate box.

Prism	Pyramid

1.6 Which polyhedron could this be a net for?



1.7 Which polyhedron could this be a net for?



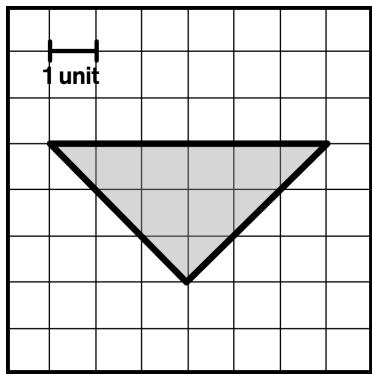
**Unit 6.1, Lesson 10: Practice Problems**

2. Match each quantity with the unit you would most likely use to measure it.

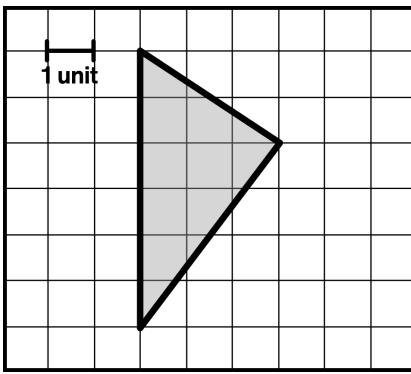
- |   |                       |
|---|-----------------------|
| <input type="checkbox"/> The surface area of a tissue box | A. square meters      |
| <input type="checkbox"/> The amount of water in a glass   | B. yards              |
| <input type="checkbox"/> The area of a parking lot        | C. cubic inches       |
| <input type="checkbox"/> The length of a soccer field     | D. cubic feet         |
| <input type="checkbox"/> The volume of a bathtub          | E. square centimeters |

Show how you know each of these triangles has an area of 9 square units.

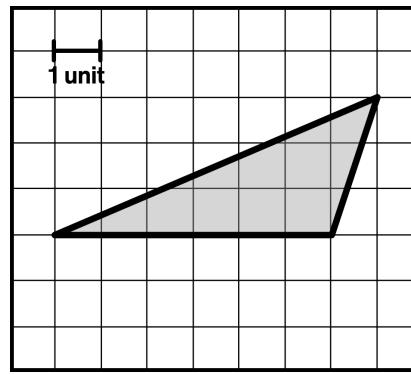
3.1



3.2

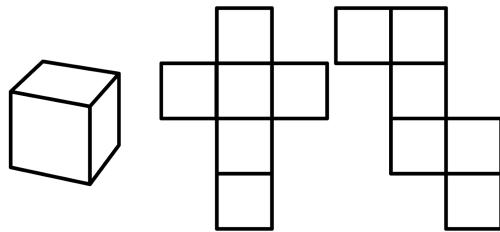


3.3



## Explore

Here is a cube and two possible nets. Draw as many different cube nets as you can.



**Ready for more?** 11 unique nets exist for a cube. Can you draw them all?

## Reflect

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Complete each sentence with a number that makes the equation true.

$$3 \cdot \underline{\quad} = 15$$

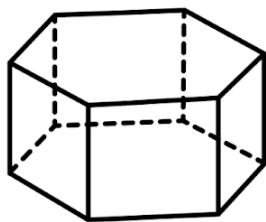
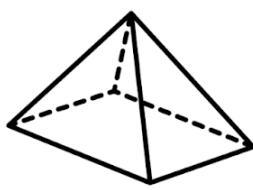
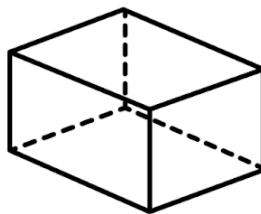
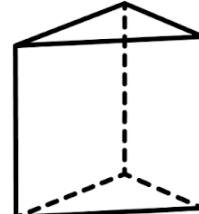
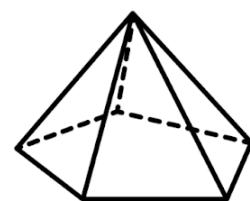
$$15 \cdot \underline{\quad} = 3$$

$$4 \cdot \underline{\quad} = 24$$

$$24 \cdot \underline{\quad} = 4$$

## Practice

Use these five polyhedra to answer the questions below.

**A****B****C****D****E**

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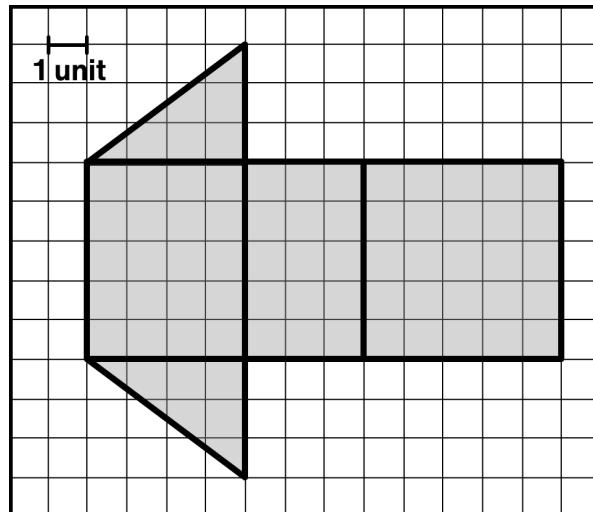
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- 1.1 Write the name of each polyhedron below its picture.

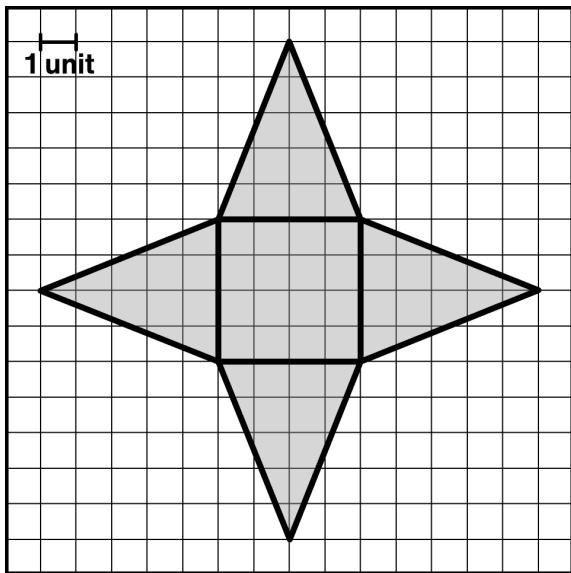
- 1.2 Which polyhedron can be created from this net?  
Explain how you know.

- 1.3 Use the net to calculate the surface area of the polyhedron. Use appropriate units.



2. Select **all** units that can be used to describe surface area.

 Square meters Feet Centimeters Cubic inches Square inches Square feet

**Unit 6.1, Lesson 11: Practice Problems**

- 3.1 What three-dimensional figure can be created from the net?

- 3.2 What is the surface area of the figure?

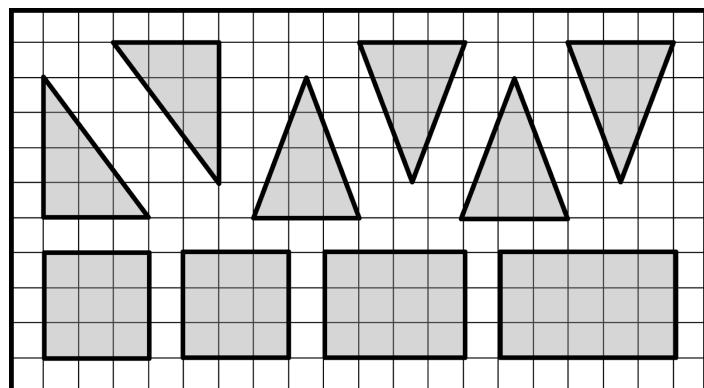
Determine the area of each figure.

- 4.1 A parallelogram with a base of 12 meters and a height of 1.5 meters.

- 4.2 A triangle with a base of 16 inches and a height of  $\frac{1}{8}$  inch.

## Explore

Describe or draw two different polyhedra that could be created using these shapes as faces.

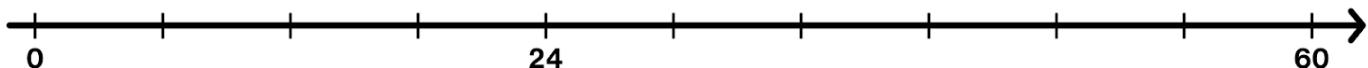


## Reflect

1. Put a heart next to the question you are most proud of.
2. Use the space below to ask one question you have or to share something you are proud of.

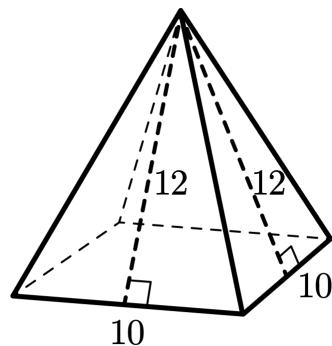
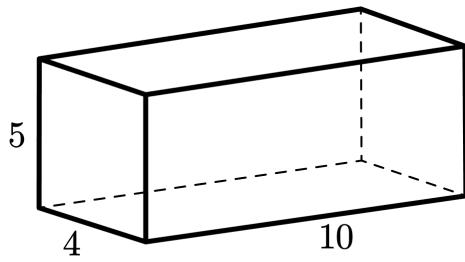
## Warm-Up

Label each tick mark with its value on the number line.

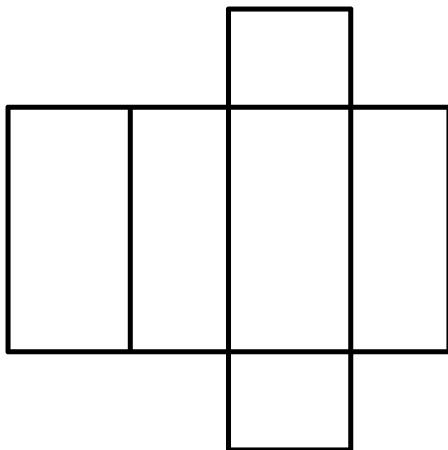


## Practice

Here are two polyhedra and their nets.

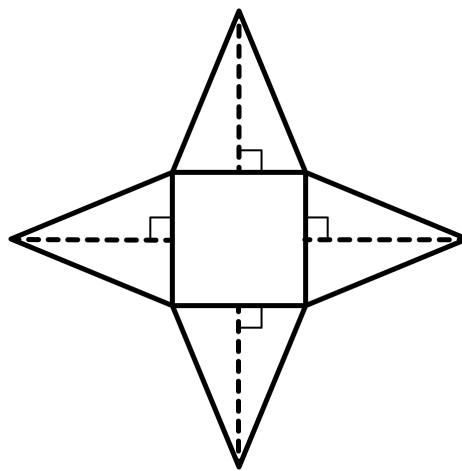


- 1.1 What is the name of this solid?
  
- 1.2 Use the polyhedron above to label all the lengths in this net.



- 1.3 Calculate the surface area.  
Explain or show your reasoning.

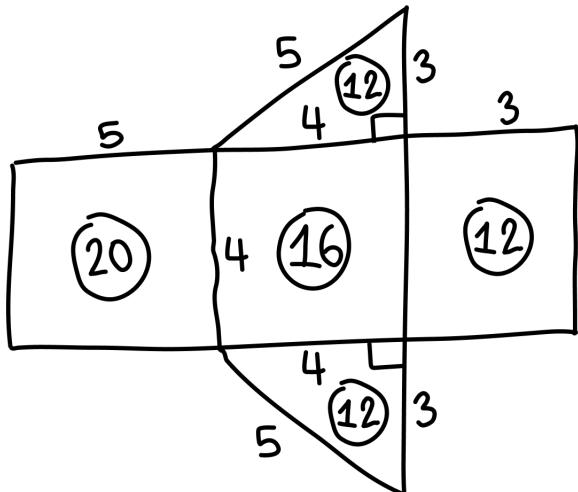
- 2.1 What is the name of this solid?
  
- 2.2 Use the polyhedron above to label all the lengths in this net.



- 2.3 Calculate the surface area.  
Explain or show your reasoning.

**Unit 6.1, Lesson 12: Practice Problems**

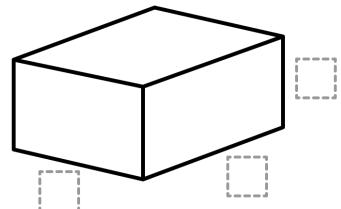
Takeshi drew a net for a polyhedron and calculated its surface area.



- 3.1 What polyhedron can be folded from this net?
- 3.2 Takeshi calculated part of the surface area correctly. What was one thing that he did well?
- 3.3 Takeshi made some mistakes in his calculations. What were the mistakes?

## Explore

Create a rectangular prism with a surface area of 40 square units.

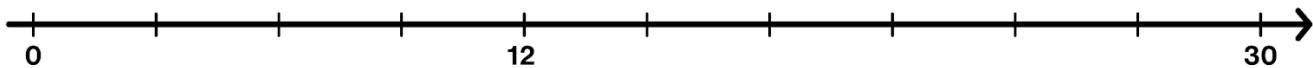


## Reflect

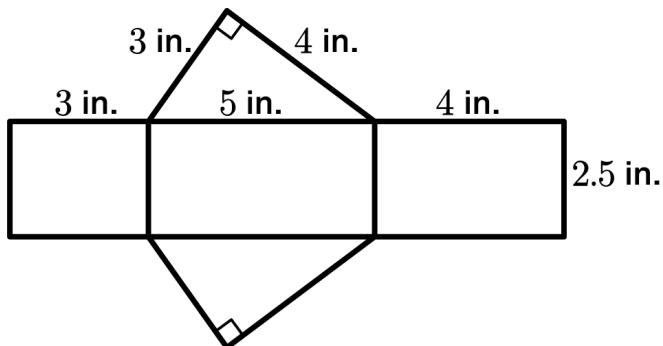
1. Put a star next to the question you understood best.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Label each tick mark with its value on the number line.



## Practice

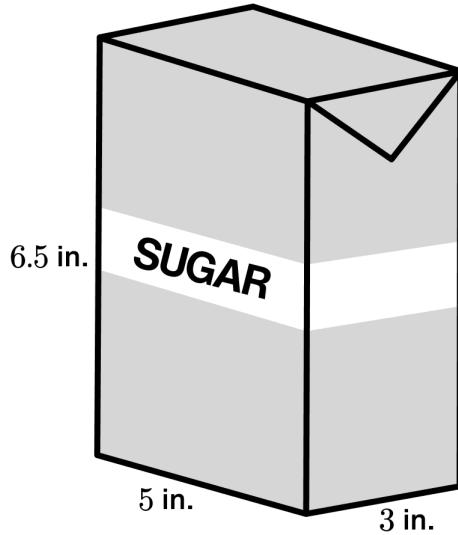


- 1.1 If this net were folded, what polyhedron would it make?
  
- 1.2 What is the surface area of the polyhedron? Explain or show your reasoning.

A box of sugar is 5 inches by 3 inches by 6.5 inches.

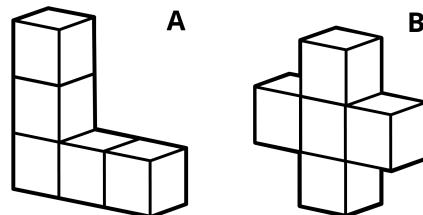
- 2.1 Estimate about how much cardboard the box uses. Show all of your thinking.

- 2.2 Estimate about how much sugar the box can hold. Show all of your thinking.



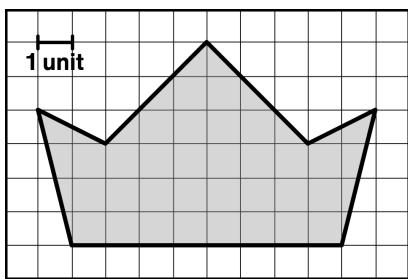
**Unit 6.1, Lesson 13: Practice Problems**

3. Which figure has a greater surface area?  
Show or explain how you know.

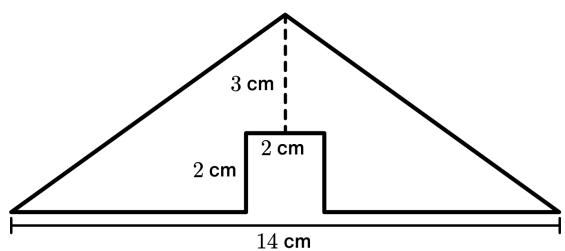


Calculate the area of each polygon. Explain or show your reasoning.

4.1



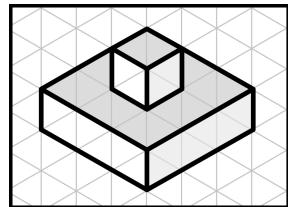
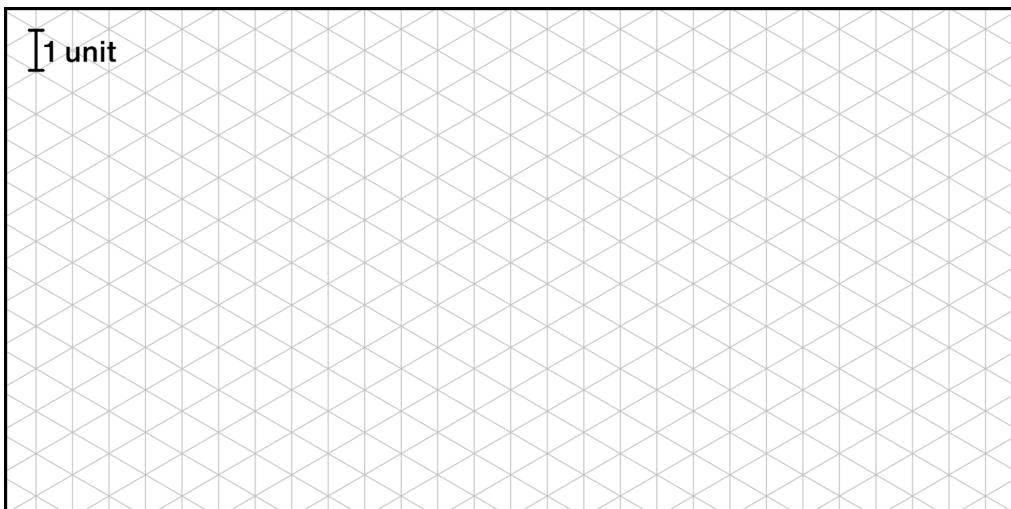
4.2



## Explore

This grid is called an isometric grid. Use the grid to draw your own 3-D solid.

Here is an example.

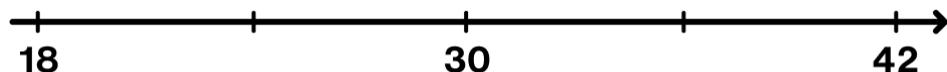


## Reflect

1. Put a star next to a question you are still curious about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

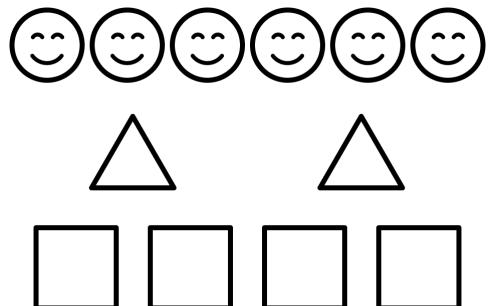
Label the blank tick marks on the number line.



## Practice

Answer the questions based on this picture.

- 1.1 The ratio of smiley faces to triangles is \_\_\_\_ to \_\_\_\_.
- 1.2 The ratio of squares to triangles is \_\_\_\_ : \_\_\_\_.
- 1.3 For every 2 triangles, there are \_\_\_\_\_ squares.
- 1.4 Select the false statement.
  - A. The ratio of smiley faces to squares is 4 : 6 .
  - B. The ratio of squares to triangles is 4 : 2 .
  - C. There are 3 smiley faces for every 1 triangle.

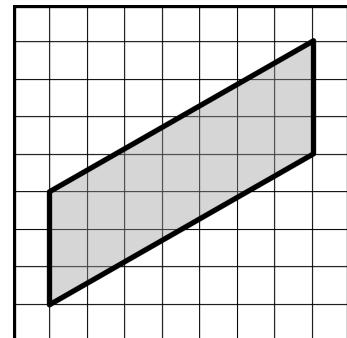


Create a representation for each situation.

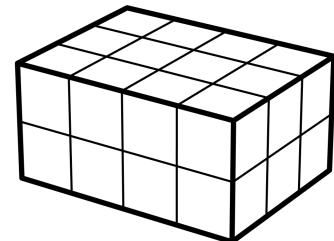
Description	Picture
2.1 The ratio of stars to squares is 1 to 2 .	
2.2 The ratio of stars to hearts is 3 : 2 .	
2.3 There is 1 heart for every 3 squares.	
2.4	
2.5	

**Unit 6.2, Lesson 2: Practice Problems**

3. Determine the area of the parallelogram. Show all of your thinking.



4. Determine the volume and surface area of the prism.  
Show all of your thinking.



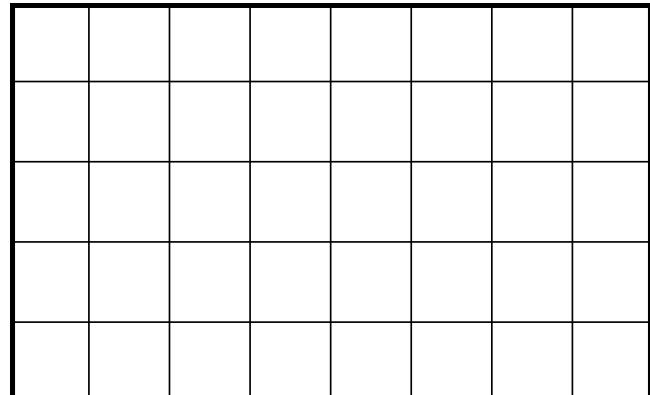
Volume: \_\_\_\_\_

Surface area: \_\_\_\_\_

## Explore

Here is a 5 -by- 8 grid.

Create a design so that the ratio of unshaded squares to shaded squares is 3 : 2 .

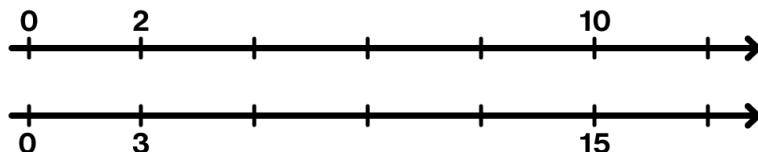


## Reflect

1. Star the question you spent the most time on.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Label the blank tick marks on each number line.

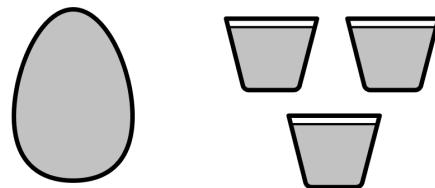


## Practice

There are many recipes for pasta. Some of them call for the following ratio of eggs to flour.

- 1.1 Draw a picture that shows how many ounces of flour you would need for 2 eggs.

Mix 1 egg for every 3 ounces of flour.



Fill in the blanks to create equivalent ratios.

1.2

- 4 eggs
- \_\_\_\_ ounces of flour

1.3

- \_\_\_\_ eggs
- 15 ounces of flour

- 1.4 Thiago mixed 3 eggs with 6 ounces of flour.

Will his pasta taste the same as the original? Explain your thinking.

2. A bakery uses this ratio of water to flour to bake their bread recipe.

List 2 other ratios of water to flour that would make the same type of bread.

\_\_\_\_ pounds of water : \_\_\_\_ pounds of flour

\_\_\_\_ pounds of water : \_\_\_\_ pounds of flour

Mix 3 pounds water for every 5 pounds flour.





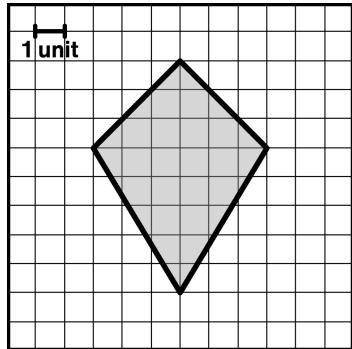
## Unit 6.2, Lesson 3: Practice Problems

Koharu's pie dough recipe uses 6 ounces of flour, 4 ounces of butter, and 2 ounces of water. Complete the sentences to describe the ratios in her recipe.

- 3.1 For every 2 \_\_\_\_\_, there are 6 \_\_\_\_\_.
- 3.2 The ratio of \_\_\_\_\_ to \_\_\_\_\_ is 6 : 2.
- 3.3 The ratio of \_\_\_\_\_ to \_\_\_\_\_ is 2 : 3.
- 3.4 The ratio of \_\_\_\_\_ to \_\_\_\_\_ is 3 : 2.
- 3.5 Koharu made a new batch of pie dough with 3 ounces of flour, 2 ounces of butter, and 1 ounce of water.

Will her pie dough taste the same as the original recipe? Explain your reasoning.

4. Determine the area of this polygon.  
Explain or show your strategy.



## Explore

Make a true statement by filling in each blank using the digits 0 to 9 without repeating.

[ ] : [ ] is equivalent to [ ] [ ] : [ ] [ ]

Explain how you know your statement is true.

## Reflect

1. Put a heart next to the problem you are most proud of.
2. Use the space below to ask one question you have or to share something you are proud of.



# Science Mom Lesson 14

## Unit 6.2, Lesson 5: Practice Problems

Name \_\_\_\_\_

### Warm-Up

Determine the value of each expression.

$7 \cdot 4 = \underline{\hspace{2cm}}$

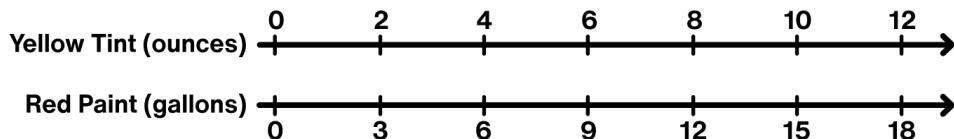
$7 \cdot 30 = \underline{\hspace{2cm}}$

$7 \cdot 34 = \underline{\hspace{2cm}}$

$7 \cdot 68 = \underline{\hspace{2cm}}$

### Practice

A shade of orange paint is made by mixing 2 ounces of yellow tint with 3 gallons of red paint.



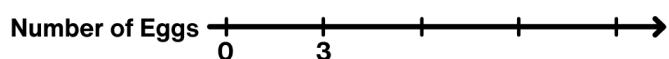
- 1.1 List two other combinations of red paint and yellow tint that can create this shade of orange.
  
- 1.2 How much red paint do you need for 6 ounces of yellow tint?
  
- 1.3 How much yellow tint do you need for 12 gallons of red paint?

This double number line diagram shows the amount of flour and eggs for one batch of cookies.

- 2.1 Complete the double number line.



- 2.2 What is the ratio of cups of flour to eggs?



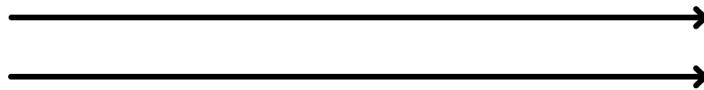
- 2.3 How much flour do you need for 12 eggs?

- 2.4 How many eggs do you need for 15 cups of flour? Explain or show your thinking.

**Unit 6.2, Lesson 5: Practice Problems**

Metropolis Elementary recommends 2 adults for every 15 students on a field trip.

- 3.1 Draw a double number line to represent this situation.



- 3.2 How many adults would you need to take 75 students on a trip?

- 3.3 How many adults would you recommend for 50 students? Explain your thinking.

Each pair of ratios are equivalent. Explain or show how you know they are equivalent.

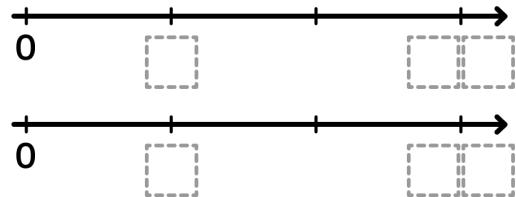
4.1  $5 : 2$  and  $15 : 6$

4.2  $18 : 3$  and  $6 : 1$

4.3  $2 : 7$  and  $100 : 350$

## Explore

Using the digits 0–9 without repetition, fill in each blank to create a double number line.



## Reflect

1. Put a smiley face next to a question that you understood well.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the value of each expression.

$8 \cdot 10 = \underline{\hspace{2cm}}$

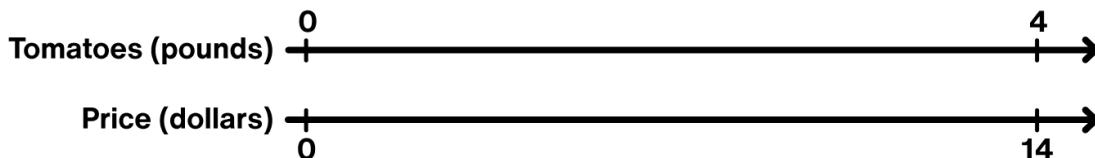
$8 \cdot 40 = \underline{\hspace{2cm}}$

$8 \cdot 41 = \underline{\hspace{2cm}}$

$8 \cdot 38 = \underline{\hspace{2cm}}$

## Practice

The double number line below shows that 4 pounds of tomatoes cost \$14.



- 1.1 Draw and label tick marks that show the prices of 1, 2, and 3 pounds of tomatoes.
- 1.2 Ariel needs 6 pounds of tomatoes to make sauce. How much would that cost?

Callen bought several items at the grocery store. Calculate the price per item.

2.1 12 eggs for \$3

2.2 3 bags of rice for \$7.50

2.3 10 apples for \$3.50

At these rates, how much would it cost for:

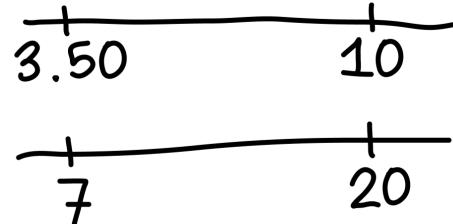
2.4 6 eggs?

2.5 4 bags of rice?

2.6 7 apples?

Callen drew a double number line for Problem 2.6.

- 3.1 What did Callen do well?



- 3.2 What advice would you give them?

**Unit 6.2, Lesson 6: Practice Problems**

4 movie tickets cost \$48 . At this rate, what is the cost of:

4.1 5 movie tickets?

4.2 11 movie tickets?

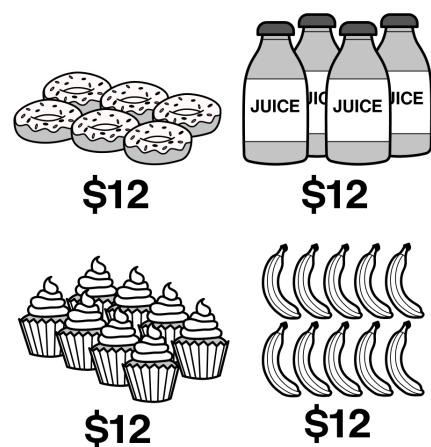
4.3 Describe a strategy that can help you figure out the cost of any number of movie tickets.

5. Explain or show why  $4 : 6$  and  $8 : 10$  are **not** equivalent ratios.

## Explore

Here are four groups of items.

1. If you bought one of each item, would your total be more or less than \$10 ? Explain or show your reasoning.



2. Create a list of these items with a total price of exactly \$10 .

## Reflect

1. Put a question mark next to a question you are feeling unsure of.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Complete each equation with a number that makes it true.

$$8 \cdot 40 = \underline{\hspace{2cm}}$$

$$8 \cdot \underline{\hspace{2cm}} = 40$$

$$40 \cdot \underline{\hspace{2cm}} = 8$$

$$40 \cdot \underline{\hspace{2cm}} = 5$$

## Practice

To make 1 can of sky-blue paint, Ama mixes 2 ounces of blue tint with 3 gallons of white paint.

1.1 How much of each color does Ama need to make 4 cans?

1.2 Write a ratio of blue tint to white paint that would be a darker shade of blue.

1.3 Write a ratio of blue tint to white paint that would be a lighter shade of blue.

2. Here are two mixtures of light-purple paint.

- Peony Purple: 5 ounces of purple tint for every 2 cups of white paint
- Purple Pizazz: 15 ounces of purple tint for every 8 cups of white paint

Which mixture is a lighter shade of purple? Explain your reasoning.

3. Here are three mixtures of green paint.

- 2 gallons white : 4 ounces green
- 3 gallons white : 5 ounces green
- 5 gallons white : 8 ounces green

Order the mixtures from lightest green to darkest green.

Lightest green

\_\_\_\_\_

Darkest green

**Unit 6.2, Lesson 7: Practice Problems**

4. At DesGrocery, 5 tulips cost \$11. At GroceryMos, 6 tulips cost \$13. Is the price per tulip at each store equivalent? Explain how you know.

DesGrocery is selling frozen vegetables at 4 bags for \$9. At this rate, what is the cost of:

5.1 6 bags?

5.2 1 bag?

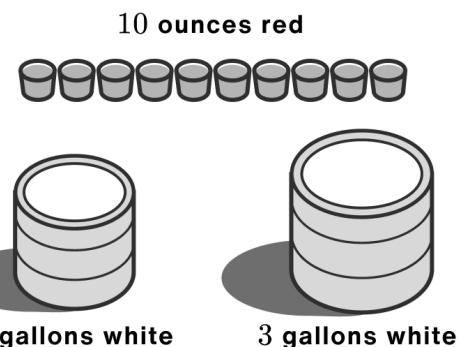
5.3 9 bags?

## Explore

You have 10 ounces of red tint and two containers of white paint: one with 2 gallons and one with 3 gallons.

Divide the red tint between the two containers so that each container will be the same shade of pink.

Explain how you know they will be the same shade.



## Reflect

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Complete each equation with a number that makes it true.

$$35 \cdot 5 = \underline{\hspace{2cm}}$$

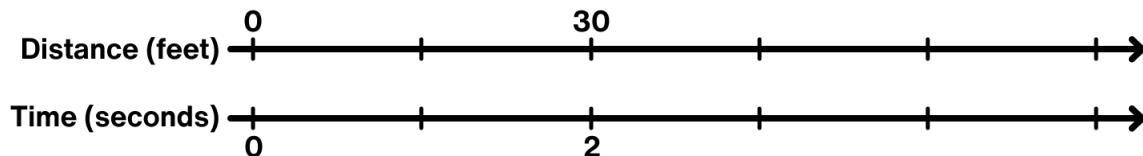
$$35 \div 5 = \underline{\hspace{2cm}}$$

$$5 \div \underline{\hspace{2cm}} = 1$$

$$5 \cdot \underline{\hspace{2cm}} = 1$$

## Practice

A person on a scooter travels 30 feet in 2 seconds at a constant rate.



- 1.1 Fill in the missing values on the double number line.
- 1.2 What is the speed of the scooter in feet per second? \_\_\_\_\_
- 1.3 At this rate, determine how long it would take the scooter to travel 105 feet.
  
- 1.4 A person on a skateboard travels 55 feet in 4 seconds. Is the skateboard traveling faster than, slower than, or at the same speed as the scooter? Explain or show your reasoning.
  
- 1.5 A person on roller blades travels 90 feet in 5 seconds. Are the roller blades traveling faster than, slower than, or at the same speed as the scooter? Explain or show your reasoning.
  
2. Did you know the top speeds of these animals?
  - Galapagos tortoise: 16 meters in 3 minutes
  - Garden snail: 8 meters in 5 minutes
  - Three-toed sloth: 9 meters in 2 minutes

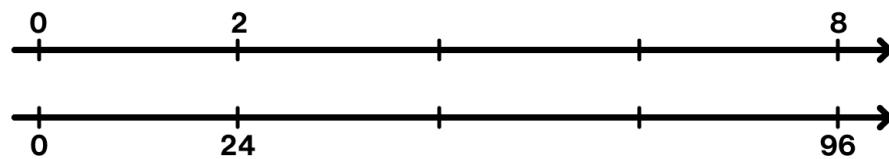
Order the animals from slowest to fastest.

Slowest \_\_\_\_\_ Fastest \_\_\_\_\_

**Unit 6.2, Lesson 8: Practice Problems**

3. Ariana gets paid \$90 for every 5 hours of work in her neighbor's garden. Last summer, Lucy got paid \$36 for every 2 hours of work in the same garden. Are they paid at the same rate? Explain your thinking.

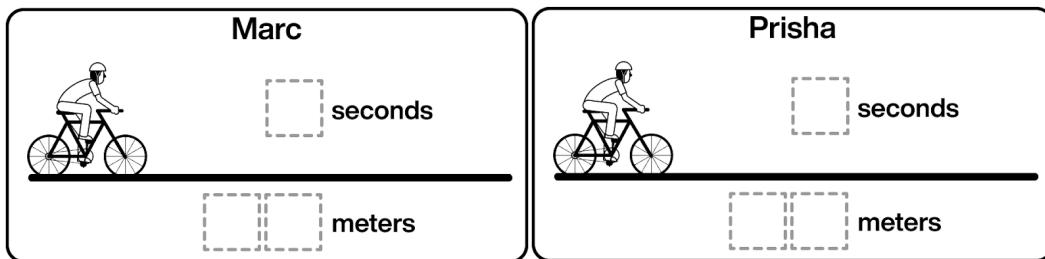
Metropolis Elementary recommends a ratio of 2 adults for every 24 children on every field trip.



- 4.1 Label the axis of each number line and fill in the missing values to represent the situation.
- 4.2 If there are 72 children on the field trip, how many adults are needed?
- 4.3 The school has 20 adults and 350 students. If everyone goes on a field trip, would that meet the recommendation? Explain your thinking.

## Explore

Using the digits 0–9 without repeating, fill the blanks so that Marc and Prisha have the same speed.



## Reflect

1. Put a star next to the question you spent most of your time on.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Complete each equation with a number that makes it true.

$$8 \cdot \underline{\quad} = 40$$

$$8 \cdot \underline{\quad} = 20$$

$$8 \cdot \underline{\quad} = 200$$

$$8 \cdot \underline{\quad} = 2$$

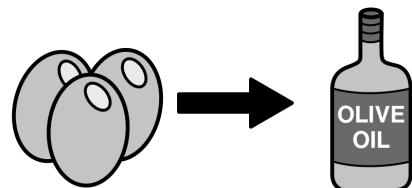
## Practice

Did you know it takes about 40 pounds of olives to make 3 liters of olive oil?

- 1.1 Orchard A grew about 2 000 pounds of olives.

How many liters of olive oil would this make?

Use the table if it helps you with your thinking.



- 1.2 Orchard B grew about 3 000 pounds of olives.

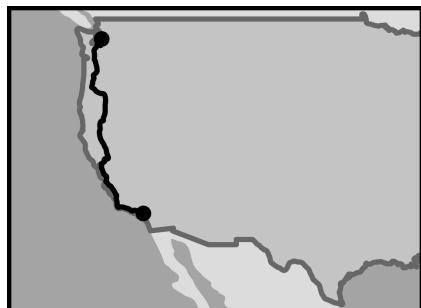
How many liters of olive oil would this make?

Olives (lb.)	Olive Oil (L)
40	3

There is a train that travels from Seattle, Washington, to Los Angeles, California. In its first 2 hours, the train went about 80 miles, including stops.

- 2.1 At this rate, how far does the train travel per hour?

- 2.2 At this rate, how long will it take to travel the 1 400 miles from Seattle to Los Angeles?



**Unit 6.2, Lesson 9: Practice Problems**

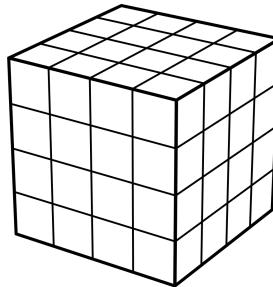
3. A park fountain sprayed 20 gallons of water in  $\frac{1}{2}$  an hour, then was turned off for awhile.

When it was turned back on, it sprayed 30 gallons in  $\frac{3}{4}$  of an hour.

Explain how you know that the fountain sprayed water at the same rate both times it was on.

4. Explain or show how you know that 600: 450, 60: 45, and 4: 3 are all equivalent.

- 5.1 What is the volume of this cube?



- 5.2 What is its surface area?

## Explore

South Africa broke the world record for largest pizza in 1990. It weighed 26 833 pounds!

1. 3 medium pizzas weigh about 2 pounds with toppings. About how many medium pizzas are equivalent to the world's largest pizza?
2. How many people do you think the world's largest pizza could feed?

## Reflect

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Complete each equation with a number that makes it true.

$$8 \cdot \underline{\quad} = 1$$

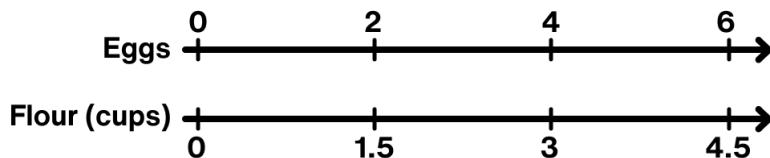
$$\frac{1}{8} \cdot 8 = \underline{\quad}$$

$$\frac{5}{8} \cdot 8 = \underline{\quad}$$

$$8 \cdot \underline{\quad} = 3$$

## Practice

Here is part of a recipe for different-size cakes, showing the ratio of eggs to flour.

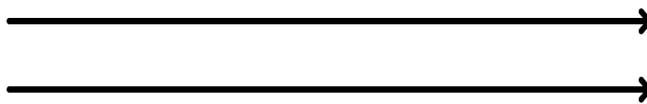


- 1.1 Make a table that represents the same situation.
- 1.2 How much flour do you need for each egg in this recipe?
  
- 1.3 How many eggs would you need for a bag that contains 18 cups of flour?

Eggs	Flour (cups)

The same cake recipe uses 2 cups of sugar for every 3 cups of flour.

- 2.1 Draw a double number line to represent this situation.



- 2.2 How much sugar would you need for a bag that contains 18 cups of flour?
  
- 2.3 Which representation do you prefer to answer the previous question: a table or a double number line? Explain your thinking.

**Unit 6.2, Lesson 10: Practice Problems**

Inola is making personal pizzas for her birthday party. For 4 pizzas, she uses 10 ounces of cheese. At this rate, how much cheese does she need if she makes:

3.1 12 pizzas?

3.2 22 pizzas?

3.3 11 pizzas?

Inola went to the farmers market to get ingredients. Determine the price per item of each vegetable.

4.1 6 onions for \$1.80

4.2 12 mushrooms for \$3

4.3 5 peppers for \$5.50

**Explore**

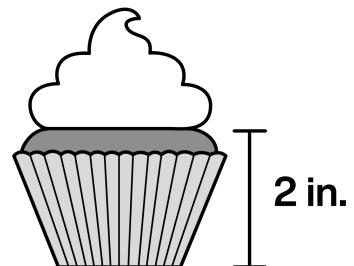
People have very different opinions about the perfect amount of cupcake frosting.

What do you think is the appropriate thickness of frosting for a 2 -inch cake?

\_\_\_\_\_ inches of frosting : 2 inches of cake

At this rate, how thick would the frosting be if the cake were:

- 3 inches tall?
- 31 inches tall (close to the world record)?
- 1 centimeter tall?

**Reflect**

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

What is  $\frac{1}{2}$  of 12?

What is  $\frac{1}{4}$  of 12?

What is  $\frac{3}{4}$  of 12?

## Practice

The ratio of coaches to players at practice is 2 : 5. There are 21 people at practice.

- 1.1 Label the tape diagram to represent the situation. Include the value of each small rectangle.

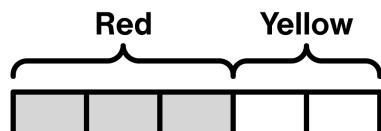


- 1.2 How many coaches are in the room?

- 1.3 How many players are in the room?

Here is a tape diagram representing the ratio of red paint to yellow paint in a mixture of orange paint.

- 2.1 What is the ratio of red paint to yellow paint?



- 2.2 If I had 6 gallons of red paint, how much yellow paint would I need? \_\_\_\_\_

How much red and yellow paint would I need if I wanted:

- 2.3 25 gallons of orange?

- 2.4 30 gallons of orange?

Red paint: \_\_\_\_\_ Yellow paint: \_\_\_\_\_

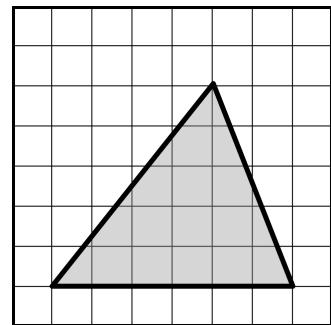
Red paint: \_\_\_\_\_ Yellow paint: \_\_\_\_\_

**Unit 6.2, Lesson 12: Practice Problems**

3. Taylor entered a 100 -mile bike race. They know they can ride 32 miles in 160 minutes.

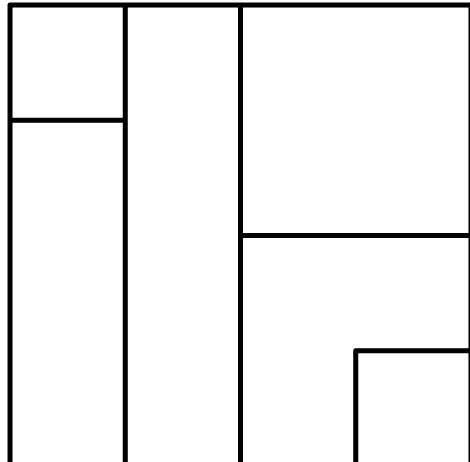
At this rate, how long will it take them to finish the race? Use any strategy you find helpful.

4. Determine the area of the triangle and show your reasoning.

**Explore**

Use what you know about area to shade in the figure so that the ratio of shaded area to unshaded area is  $1 : 3$ .

Explain how you know the ratio is  $1 : 3$ .

**Reflect**

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

What is  $\frac{1}{2}$  of 20?

What is  $\frac{1}{5}$  of 20?

What is  $\frac{3}{5}$  of 20?

## Practice

Pasta is made from 3 parts water and 5 parts flour. Sora is making 32 ounces of pasta for a party.

- 1.1 Label the tape diagram to represent the situation.



- 1.2 How much water does Sora need to make 32 ounces of pasta?

- 1.3 How much flour does Sora need to make 32 ounces of pasta?

Sora is also making a salad. Her salad dressing recipe uses 6 teaspoons of vinegar for every 15 teaspoons of olive oil.

- 2.1 How much vinegar does Sora need for 5 teaspoons of olive oil?

- 2.2 How much olive oil does Sora need for 8 teaspoons of vinegar?

- 2.3 If Sora makes 42 teaspoons of salad dressing, how much of each ingredient is in it?

- 2.4 If Sora makes 14 teaspoons of salad dressing, how much of each ingredient is in it?

**Unit 6.2, Lesson 13: Practice Problems**

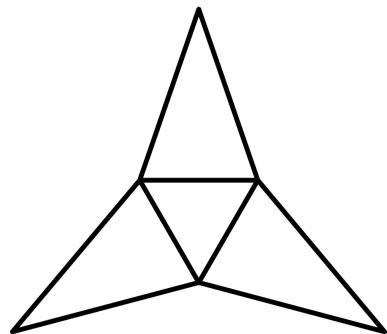
3. At the town book fair, all books cost the same amount. Katie paid \$13 for 4 books.

Sydney bought 10 books. How much did she pay?

4.1 If this net were folded, what type of polyhedron would it make?

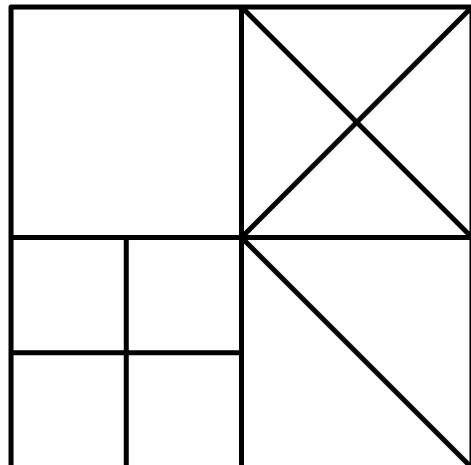
- A. A triangular pyramid
- B. A trapezoidal prism
- C. A triangular prism
- D. A rectangular pyramid

4.2 Describe a strategy for calculating the surface area of this polyhedron.

**Explore**

Use what you know about area to shade in the figure so that the ratio of shaded area to unshaded area is 3: 5.

Explain how you know the ratio is 3: 5.

**Reflect**

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Select all the expressions that are equivalent to  $2 \cdot \frac{2}{5}$ .

 0.8  $\frac{4}{10}$   $\frac{1}{5}$  2.4  $\frac{4}{5}$ 

## Practice

Choose the unit you would most likely use to measure each object.

- 1.1 The height of a building \_\_\_\_
- 1.2 The length of a fingernail \_\_\_\_
- 1.3 The mass of a paper clip \_\_\_\_
- 1.4 The distance between two cities \_\_\_\_
- 1.5 The weight of a package \_\_\_\_
- 1.6 The volume of a water cooler \_\_\_\_

- A. Gallons
- B. Centimeters
- C. Grams
- D. Pounds
- E. Feet
- F. Kilometers

Circle the larger unit of measure. Then determine if the unit measures length, volume, or mass.

- 2.1 meter or kilometer
- 2.2 yard or foot
- 2.3 pound or ounce

Name an object that:

- 3.1 Is about 1 meter in length.
- 3.2 Weighs about 5 pounds.

- 3.3 Has an area around 1 square foot.
- 3.4 Is about 1 centimeter in length.

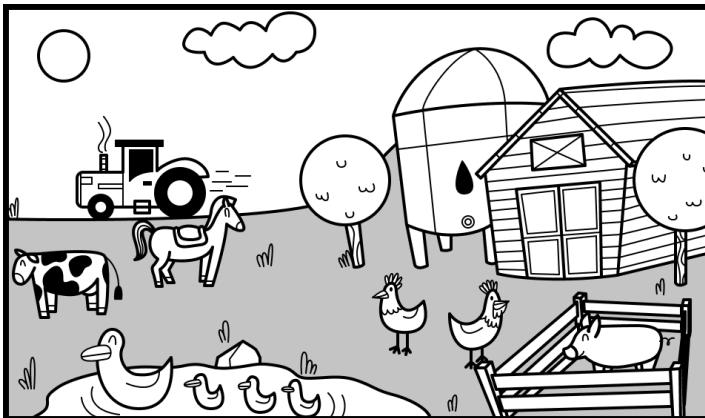
**Unit 6.3, Lesson 1: Practice Problems**

Jalen earns \$33 for babysitting 4 hours.

- 4.1 At this rate, how much will he earn if he babysits for 7 hours? Explain your thinking.
  
- 4.2 After how many hours of babysitting will Jalen have made over \$500? Explain your thinking.

**Explore**

Use the image below to find examples of each unit.



Appropriate Unit of Measure	Example
Feet	Length of the tractor
Gallons	
Square inches	
Miles per hour	
Centimeters	

**Reflect**

1. Star the problem you spent the most time on.
  
2. Use the space below to ask one question you have or to share something you are proud of.



# Science Mom Lesson 23

## Unit 6.3, Lesson 3: Practice Problems

Name \_\_\_\_\_

### Warm-Up

Select all the expressions that are equivalent to  $4 \cdot \frac{3}{8}$ .

$\frac{12}{8}$

$\frac{3}{2}$

$\frac{12}{32}$

4.325

1.5

### Practice

$1 \text{ kg} = 1000 \text{ g}$

$3 \text{ oz.} \approx 85 \text{ g}$

$4 \text{ kg} \approx 141 \text{ oz.}$

$11 \text{ lb.} \approx 5 \text{ kg}$

1.1 15 oz. is approximately  
\_\_\_\_\_ g.

1.2 2 kg is approximately  
\_\_\_\_\_ oz.

1.3 20 lb. is approximately  
\_\_\_\_\_ kg.

2. Malik's height is 57 inches. What could be his height in centimeters? (100 inches = 254 cm)

A. 22.4

B. 57

C. 144.8

D. 3 551

Explain your reasoning.

Jordan's family exchanged 250 dollars for 5 000 pesos.

3.1 Jordan bought a sweater for 550 pesos. How many dollars did the sweater cost?

3.2 If Jordan's family exchanges 200 dollars at the same rate, how many pesos will they have?

**Unit 6.3, Lesson 3: Practice Problems**

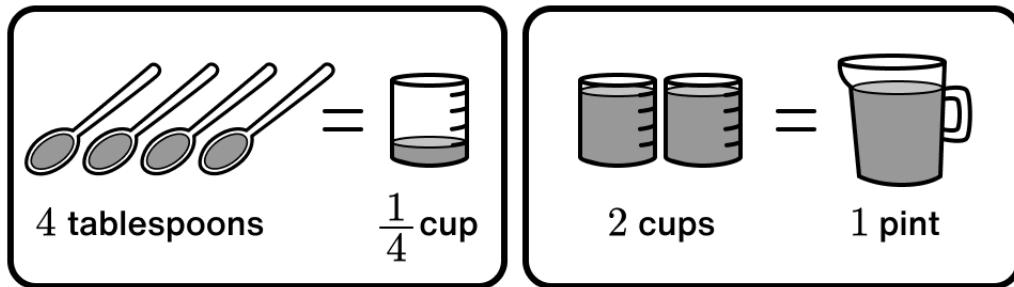
4. 5 gallons is about equal to 19 liters. Which has a larger volume: 1 gallon or 1 liter?

Explain your reasoning.

Kwasi bought 15 postage stamps for \$8.25 . All stamps cost the same amount.

5.1 How much will 12 stamps cost?

5.2 How many stamps can Kwasi purchase with \$22 ?

**Explore**

4 tablespoons are in  $\frac{1}{4}$  of a cup. 2 cups are in 1 pint. How many tablespoons are there in 1 pint?

If you get stuck, consider making a double number line or making a table.

**Reflect**

1. Put a question mark next to a problem you would like to compare with a classmate.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Order these from slowest to fastest speed. Every speed is in miles per hour.

10.5

10.05

 $\frac{43}{5}$  $\frac{43}{4}$ 

Slowest speed \_\_\_\_\_ Fastest speed \_\_\_\_\_

## Practice

Mia and Liam were trying out new remote control cars. Mia's traveled 135 feet in 3 seconds. Liam's traveled 228 feet in 6 seconds. Both cars traveled at a constant speed.

- |   |  |                            |
|---|--|----------------------------|
| 1.1 How far did Mia's car travel in 1 second? | 1.2 How far did Liam's car travel in 1 second? | 1.3 Whose traveled faster? |
|---|--|----------------------------|
- 1.4 Deven says he has a remote control car that can travel 12 yards per second. Is his car faster or slower than the other two?
2. The cost of 5 cans of pinto beans is \$3.35 . At this rate, how much do 11 cans of pinto beans cost? Explain your reasoning.
3. Ivan is curious if he can run faster than a rabbit. He runs 90 feet in 5 seconds. The average rabbit can run at a speed of 35 feet per second. Is Ivan faster than the rabbit?  
Explain your reasoning.

**Unit 6.3, Lesson 4: Practice Problems**

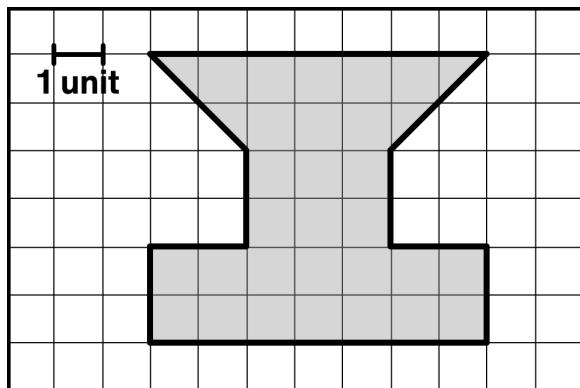
Name an object that:

4.1 Has a weight of about 10 pounds.

4.2 Is about 10 meters tall.

5.1 Decompose this polygon so that its area can be calculated.

5.2 Calculate the area of the polygon.



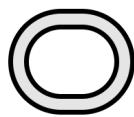
## Explore

Here are three model train tracks. The trains on each track travel at the same speed. Fill in the blanks using the digits 0–9 without repeating to show possible times for completing 1 lap on each track.

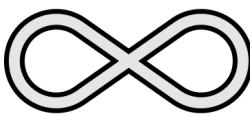
sec.

sec.

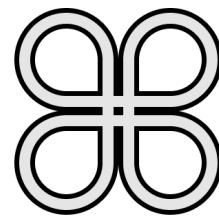
sec.



100 cm



200 cm



400 cm

## Reflect

1. Circle the question you spent the most time on.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$\frac{1}{4} \text{ of } 60 =$

$\frac{3}{4} \cdot 60 =$

$\frac{1}{4} \cdot 30 =$

$\frac{3}{4} \cdot 30 =$

## Practice

A copy machine can make 500 copies every 4 minutes.

- |  |   |
|--|---|
| 1.1 How many copies per minute can it make?    | 1.2 How many minutes per copy?                                  |
| 1.3 How many copies can it make in 10 minutes? | 1.4 A teacher made 700 copies.<br>How long did it take to make? |

Jamar's class painted 50 square feet of a mural using 4 cans of paint.

- 2.1 How many square feet could they paint **per can of paint?**
- 2.2 How many cans did they use **per square foot?**
- 2.3 They want to paint a total of 310 square feet. How many cans of paint will they need?  
Show or explain your thinking.
- 2.4 Jamar predicted that they would need 3 875 cans of paint. His work is below.

$$310 \cdot 12.5 \text{ cans per square foot} = 3875 \text{ cans}$$

Do you agree? Explain your reasoning.

**Unit 6.3, Lesson 5: Practice Problems**

At the grocery store, Abdullah purchased 3 pounds of mac and cheese for \$7.50.

3.1 What does mac and cheese cost per pound?

3.2 How much mac and cheese does he get per dollar?

3.3 How much mac and cheese could Abdullah buy with \$20?

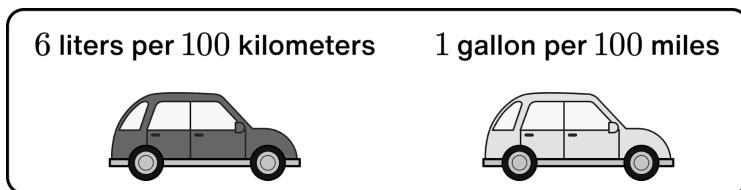
4. Here are the prices for cans of juice at different stores. The cans are the same brand and size.

Store A	Store B	Store C
4 cans for \$2.48	5 cans for \$3.00	59 cents per can

Which store offers the best deal? Explain your reasoning.

## Explore

Here is information about gasoline usage for two cars. Which car is more fuel efficient (uses gas at a lower rate)?



Note:  
5 miles  $\approx$  8 kilometers  
5 gallons  $\approx$  19 liters

## Reflect

1. Put a heart next to a question that you understand well.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$\frac{1}{3} \text{ of } 66 =$

$\frac{1}{3} \cdot 33 =$

$\frac{2}{3} \cdot 33 =$

$\frac{5}{3} \cdot 33 =$

## Practice

The table shows the amounts of onions and tomatoes in different-size batches of a salsa recipe.

- 1.1 How many onions do you need to go with 40 tomatoes?

Onions	Tomatoes
2	16
4	32
10	80

- 1.2 How many tomatoes do you need to go with 3.5 onions?

- 1.3 One unit rate in this situation is 8. What does it mean?

- 1.4 Another unit rate is  $\frac{1}{8}$ . What does it mean?

It takes 10 pounds of potatoes to make 15 servings of mashed potatoes. At this rate:

- 2.1 How many servings of mashed potatoes can be made with 15 pounds of potatoes?  
Use the table if it helps with your thinking.

Potatoes (lb.)	Mashed Potatoes (servings)
10	15

- 2.2 How many pounds of potatoes are needed to make 50 servings of mashed potatoes?

**Unit 6.3, Lesson 6: Practice Problems**

3. A train is traveling at a constant rate. Complete the table.

Time (hours)	Distance Traveled (miles)
2	110
1	
	27.5
$1\frac{1}{2}$	
	165

4. A pet hamster is placed on a digital scale. The scale reads 4.3. What could be the units?
- A. Milligrams      B. Ounces      C. Pounds      D. Inches
5. Lola's family is looking to purchase a car that is 176.5 inches long. They have a parking space that is 16.25 feet long. Can this car fit in the parking space? Explain your answer.

**Explore**

Aditi wants to use one measurement tool to make their fruit salad. She chooses a  $\frac{1}{4}$  cup scoop.

Complete the table with the number of  $\frac{1}{4}$  cup scoops Aditi needs for each ingredient in the recipe.

Fruit Salad Recipe
$\frac{3}{4}$ cup of chopped strawberries
2 cups of sliced bananas
$1\frac{1}{4}$ cups of diced apples
$\frac{1}{4}$ cup of blueberries

Ingredient	Number of $\frac{1}{4}$ cups
Strawberries	
Bananas	
Apples	
Blueberries	

**Reflect**

- Put a star next to one question you are still wondering about.
- Use the space below to ask one question you have or to share something you are proud of.



# Science Mom Lesson 27

## Unit 6.4, Lesson 3: Practice Problems

Name \_\_\_\_\_

### Warm-Up

Shade each fraction of the rectangle below it.

$$\frac{5}{6}$$

--	--	--	--	--	--

$$\frac{1}{2}$$

--	--	--	--	--	--

$$\frac{2}{3}$$

--	--	--	--	--	--

### Practice

Biryani is a rice dish from South Asia. Three students made Alisha's biryani recipe using different-size scoops.

If Alisha's biryani recipe uses 4 cups of rice, how many scoops of rice does each student need?

1.1 Alisha: 2 -cup scoop

1.2 Lukas:  $\frac{1}{2}$  -cup scoop

1.3 Emma:  $\frac{1}{3}$  -cup scoop

1.4 Explain why you can represent Emma's situation with the equation  $4 \div \frac{1}{3} = ?$ .

Answer each question.

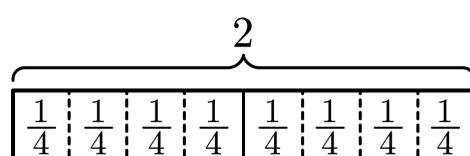
2.1 How many  $\frac{1}{2}$ 's make 5?

2.2 How many  $\frac{1}{4}$ 's make 3?

2.3 How many  $\frac{3}{4}$ 's make 3?

Lukas drew this diagram to represent "how many  $\frac{1}{4}$ 's make 2."

3.1 Write an equation to represent Lukas's diagram.



3.2 Answer Lukas's question.



## Unit 6.4, Lesson 3: Practice Problems

4. Decide if this statement is always, sometimes, or never true:

*When you divide one number by another, the result will be smaller than the first number.*

Circle one: Always      Sometimes      Never

Explain your reasoning.

Emma gets paid \$50 every month for babysitting.

- 5.1 Emma wants to save 30% of her pay. How much should she save each month?

- 5.2 Emma spends \$10 every month on a video streaming service.

What percent of her pay is this?

## Explore

A pancake recipe calls for 8 eggs, but Alisha only has 3 eggs. Adjust the amount needed for each ingredient in the table so that the recipe still tastes the same with only 3 eggs.

Ingredient	Recipe	Adjusted Recipe
Eggs	8	3
Flour	4 cups	cups
Milk	6 cups	cups
Sugar	$1\frac{1}{3}$ cups	cups

## Reflect

- Put a question mark next to a problem you would like to compare with a classmate.
- Use the space below to ask one question you have or to share something you are proud of.

**Unit 6.4, Lesson 4: Practice Problems**

Name \_\_\_\_\_

**Warm-Up**Select **all** the equations where the value of the ? is 4.

$$\square 12 \div 3 = ? \quad \square 3 \cdot ? = 12 \quad \square \frac{3}{12} = ? \quad \square 12 \cdot ? = 3 \quad \square \frac{12}{3} = ?$$

**Practice**

Abena is planting vegetables in her backyard. Determine how many of each vegetable Abena can plant in 1 planter. Use the diagrams if they help you with your thinking.

- 1.1 10 onions filled  $\frac{1}{2}$  of a planter.



- 1.2 8 asparagus filled  $\frac{2}{3}$  of a planter.



- 1.3 6 potatoes filled  $\frac{3}{4}$  of a planter.

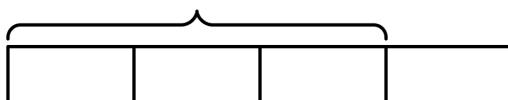


- 1.4 Abena wrote the expression  $6 \div \frac{3}{4}$  to represent how many potatoes fill 1 planter.

Describe a situation that represents  $8 \div \frac{4}{5}$ .

Ashley picked 9 strawberries from her backyard, which filled  $\frac{3}{4}$  of a cup.

- 2.1 Label the tape diagram to represent Ashley's situation.



- 2.2 How many strawberries fill 1 cup? Use the tape diagram if it helps you with your thinking.

**Unit 6.4, Lesson 4: Practice Problems**

3. Draw a tape diagram to represent and answer  $4 \div \frac{2}{5}$ .

Karima made 9 pairs of earrings in 6 hours. At this rate:

- 4.1 How long will it take Karima to make 12 pairs of earrings?

- 4.2 How many pairs of earrings can Karima make in 10 hours?

Calculate each unknown number.

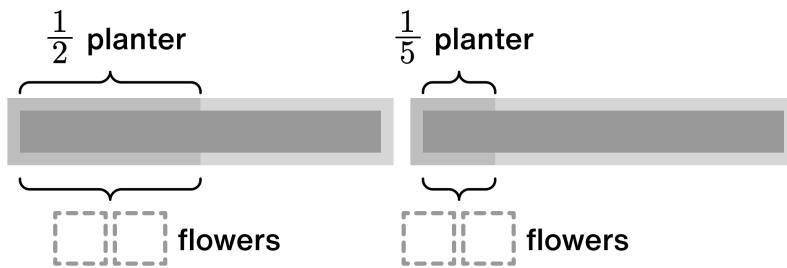
- 5.1 5 is 50% of what number?

- 5.2 10% of what number is 300?

- 5.3 18 is 150% of what number?

## Explore

Use the digits 0–9 to fill in each blank such that the same number of flowers fill each planter.



## Reflect

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Science Mom Lesson 29

## Unit 6.4, Lesson 5: Practice Problems

Name \_\_\_\_\_

## Warm-Up

Write each mixed number as an improper fraction. For example:  $5 \frac{1}{2} = \frac{11}{2}$ .

$$1 \frac{1}{2} = \underline{\hspace{2cm}}$$

$$1 \frac{3}{4} = \underline{\hspace{2cm}}$$

$$2 \frac{3}{5} = \underline{\hspace{2cm}}$$

$$5 \frac{2}{3} = \underline{\hspace{2cm}}$$

## Practice

Complete each row in the table.

Question	Tape Diagram	Answer
1.1 How many $\frac{1}{4}$ s are in 3?		
1.2 How many $\frac{2}{5}$ s are in 2?		
1.3 How many $\frac{3}{5}$ s are in 2?		
1.4 What is $3 \frac{2}{5} \div \frac{4}{5}$ ?		
1.5 What is _____ $\div$ _____?		
1.6 What is $6 \frac{1}{2} \div \frac{3}{4}$ ?		

**Unit 6.4, Lesson 5: Practice Problems**

2. Kayleen buys one 3-pound bag of cat food. Her cat eats about  $\frac{3}{4}$  of a pound every week. How many weeks does one bag last? Use a tape diagram if it helps you with your thinking.

A recipe uses 5 cups of flour for every 2 cups of sugar.

- 3.1 How much sugar is used for every cup of flour? \_\_\_\_\_
- 3.2 How much flour is used for every cup of sugar? \_\_\_\_\_

Calculate each percentage.

4.1  $25\%$  of 320

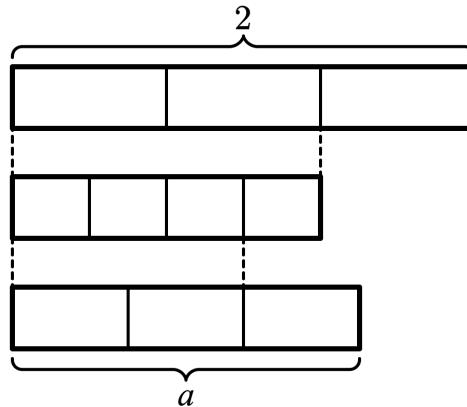
4.2  $70\%$  of 320

4.3  $44\%$  of 320

4.4  $44\%$  of 65

**Explore**

Determine the value of  $a$ .

**Reflect**

1. Put a smiley face next to a question that you understood well.
2. Use the space below to ask one question you have or to share something you are proud of.



# Science Mom Lesson 30

## Unit 6.4, Lesson 6: Practice Problems

Name \_\_\_\_\_

### Warm-Up

Write each improper fraction as a mixed number. For example:  $\frac{11}{2} = 5\ \frac{1}{2}$ .

$$\frac{9}{5} = \underline{\hspace{2cm}}$$

$$\frac{9}{4} = \underline{\hspace{2cm}}$$

$$\frac{15}{4} = \underline{\hspace{2cm}}$$

$$\frac{16}{5} = \underline{\hspace{2cm}}$$

### Practice

1. Select **all** of the expressions whose value is greater than 1.

$\frac{2}{3} \div 5$

$5 \div \frac{2}{3}$

$\frac{5}{3} \div 4$

$\frac{1}{3} \div \frac{4}{5}$

$\frac{4}{5} \div \frac{1}{3}$

Afia uses a  $\frac{1}{2}$ -cup scoop for flour. How many scoops does Afia need for each amount of flour?

2.1    1 cup of flour

2.2     $\frac{1}{4}$  cups of flour

2.3     $\frac{3}{4}$  cups of flour

Determine if the value of each expression will be greater than or less than 1. Then calculate its value. Use the tape diagrams if they help you with your thinking.

3.1     $1\ \frac{1}{2} \div \frac{2}{3}$

**Circle One**

Less than 1

Greater than 1



3.2     $\frac{4}{3} \div \frac{3}{2}$

**Circle One**

Less than 1

Greater than 1



**Value:**

**Value:**

**Unit 6.4, Lesson 6: Practice Problems**

Ella buys 5 tickets to a museum for \$21.25 . At this rate:

4.1 How much does each ticket cost?

4.2 How much would 3 tickets cost?

A school's Latino Student Union has a budget of \$240 for the year.

5.1 The club wants to spend 40% of their budget on snacks. How much money should they spend on snacks?

5.2 The club spent \$36 on decorations for Dia de los Muertos. What percent of their budget is this?

## Explore

Using the digits 1–9 without repeating, fill in each blank to make this equation true.

$$\frac{\square}{\square} \div \frac{\square}{\square} = 1$$

Using the digits 1–9 without repeating, fill in each blank to make this inequality true.

$$\frac{\square}{\square} \div \frac{\square}{\square} > 1$$

**Are you ready for more?** Find a solution using the digits 1–9 without repeating in either problem.

## Reflect

1. Put a star next to one question you are still wondering about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Write each mixed number as an improper fraction and each improper fraction as a mixed number.

$$1\frac{3}{5} = \underline{\hspace{2cm}}$$

$$\frac{17}{4} = \underline{\hspace{2cm}}$$

$$3\frac{1}{4} = \underline{\hspace{2cm}}$$

$$\frac{11}{3} = \underline{\hspace{2cm}}$$

## Practice

1. Here is Irelle's work for calculating  $\frac{2}{3} \div \frac{3}{4}$ . Explain what you think Irelle did at each step.

Step 1:

$$\frac{2}{3} \div \frac{3}{4}$$

Step 1:  $\frac{8}{12} \div \frac{9}{12}$

Step 2:

Step 2:  $\frac{8}{9}$

Calculate the value of each expression.

2.1  $5 \div \frac{3}{5}$

2.2  $2\frac{1}{2} \div \frac{5}{8}$

2.3  $\frac{4}{3} \div \frac{5}{2}$

2.4  $\frac{10}{4} \div \frac{4}{5}$

- 2.5 Here is Sahana's work for Problem 2.4.  
What advice would you give Sahana?

$$\frac{10}{4} \div \frac{4}{5} \quad 10 \div 5 = 2$$

$$4 \div 4 = 1$$

$$\frac{2}{1} = 2$$

**Unit 6.4, Lesson 7: Practice Problems**

3. A box of pancake mix has 6 cups of mix. Eliza used  $\frac{3}{4}$  of a cup for a recipe.

What fraction of the box of pancake mix did she use? Show or explain your thinking.

4. Eliza and Irelle are running on a track. Eliza ran 100 meters in 20 seconds. Irelle ran 150 meters in 35 seconds. Who ran faster? Explain or show your reasoning.

Calculate each percentage.

5.1 30% of 150

5.2 75% of 150

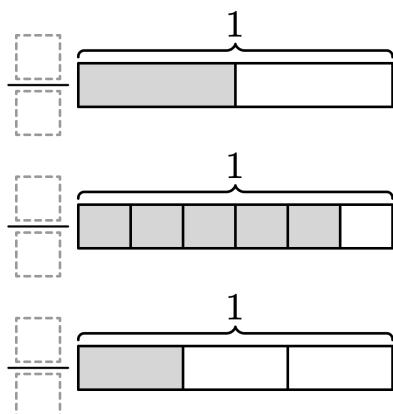
5.3 35% of 150

5.4 22% of 150

## Explore

Here are three tape diagrams.

Write a fraction to represent each tape diagram.



Determine which of the fractions on the left would make each statement below true.

$$\frac{\square}{\square} \div \frac{\square}{\square} = \frac{3}{5}$$

$$\frac{\square}{\square} \div \frac{\square}{\square} = 2\frac{1}{2}$$

## Reflect

1. Circle a problem you want to check in with a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.

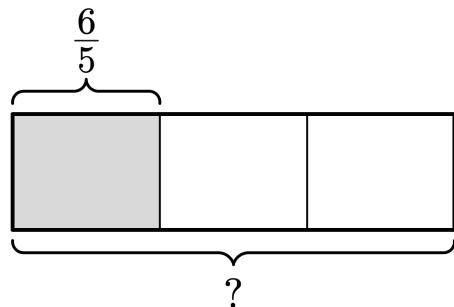
**Warm-Up**

Determine the value of each expression.

$$\frac{6}{5} \div \frac{3}{5} = \underline{\hspace{2cm}} \quad \frac{1}{5} \div \frac{3}{5} = \underline{\hspace{2cm}} \quad \frac{8}{3} \div \frac{2}{3} = \underline{\hspace{2cm}} \quad \frac{5}{3} \div \frac{2}{3} = \underline{\hspace{2cm}}$$

**Practice**

1. Use this tape diagram to help you calculate  $\frac{6}{5} \div \frac{1}{3}$ .



Complete each row in the table. Draw a tape diagram if it helps you with your thinking.

Question	Expression	Answer
2.1 6 bags of soil fill 2 gardens. How many bags fill 1 garden?		
2.2 2 bags of soil fill $\frac{1}{3}$ of a garden. How many bags fill 1 garden?	$2 \div \frac{1}{3}$	
2.3 $\frac{2}{3}$ cups of chocolate chips fill $\frac{1}{4}$ of a jar. How many cups fill 1 jar?		
2.4	$6 \div \frac{1}{4}$	



## Unit 6.4, Lesson 8: Practice Problems

Decide if each statement is always, sometimes, or never true. Explain your reasoning.

- 3.1 Dividing the same numbers in a different order keeps the value the same, like  $2 \div 3 = 3 \div 2$ .

Circle one: Always      Sometimes      Never

- 3.2 Dividing a number by  $\frac{1}{3}$  has the same value as multiplying it by 3.

Circle one: Always      Sometimes      Never

Calculate each unknown number.

- 4.1 7 is 5% of what number?

- 4.2 20 is 80% of what number?

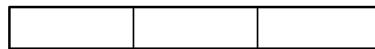
## Explore

Fill the blanks so that each equation is true. Show your thinking using the tape diagrams.

$$\frac{3}{5} \div \frac{\square}{\square} = \frac{3}{4}$$



$$\frac{2}{3} \div \frac{\square}{\square} = 1\frac{1}{3}$$



## Reflect

1. Put a smiley face next to a question you were stuck on and then figured out.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$$\frac{1}{4} \cdot 4 = \underline{\hspace{2cm}}$$

$$\frac{3}{4} \cdot 4 = \underline{\hspace{2cm}}$$

$$\frac{4}{5} \cdot 2 = \underline{\hspace{2cm}}$$

$$\frac{4}{5} \div 2 = \underline{\hspace{2cm}}$$

## Practice

Use any strategy to calculate each quotient.

1.1     $10 \div \frac{1}{5}$

1.2     $10 \div \frac{3}{5}$

---

1.3     $3\frac{3}{4} \div \frac{3}{8}$

1.4     $\frac{1}{2} \div \frac{5}{3}$

2. It took 15 days to build  $\frac{3}{5}$  of a new road. At this rate, how long will it take to build the whole road? Show or explain your thinking.



## Unit 6.4, Lesson 9: Practice Problems

How many groups of  $\frac{3}{4}$  are in:

3.1     $4 \frac{1}{2}$  ?

3.2     $2 \frac{2}{3}$  ?

One batch of trail mix uses 2 cups of cereal,  $\frac{1}{4}$  cup of raisins, and  $\frac{2}{3}$  cup of almonds.

How much of each ingredient do you need to make:

4.1    3 batches?

4.2    4 batches?

### Explore

Hamza found a pattern with some division expressions.

1. Calculate each quotient.
2. Describe a pattern you see.
3. Create your own example that would fit the pattern.

$$\frac{3}{5} \div \frac{9}{25}$$

$$\frac{2}{7} \div \frac{4}{49}$$

$$\frac{9}{4} \div \frac{81}{16}$$

### Reflect

1. Circle a question you are still curious about.
2. Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

Determine the value of each expression.

$$\frac{3}{5} \cdot 5 = \underline{\hspace{2cm}}$$

$$\frac{3}{5} \cdot 3 = \underline{\hspace{2cm}}$$

$$\frac{3}{5} \div 3 = \underline{\hspace{2cm}}$$

$$\frac{3}{5} \div 5 = \underline{\hspace{2cm}}$$

**Practice**

Use any strategy to calculate each quotient.

1.1  $2\frac{1}{2} \div \frac{5}{8}$

1.2  $\frac{4}{3} \div \frac{5}{2}$

---

1.3  $3\frac{1}{2} \div \frac{1}{3}$

1.4  $3 \div \frac{2}{3}$

2.1 Describe a situation that could be represented by the expression  $3 \div \frac{2}{3}$ .

2.2 Explain what the value of  $3 \div \frac{2}{3}$  means in your situation.

**Unit 6.4, Lesson 10: Practice Problems**

3.  $\frac{2}{5}$  of a bag of soil fills  $\frac{1}{3}$  of a container.

Is 1 bag of soil enough to fill 1 container? Show or explain your reasoning.

Ethan works as a server in a restaurant. He gets a 15% tip on the cost of every order.

4.1 What tip would he get if the order costs \$50?

4.2 What tip would he get if the order costs \$84?

4.3 Ethan got a \$9 tip. What was the cost of the order?

**Explore**

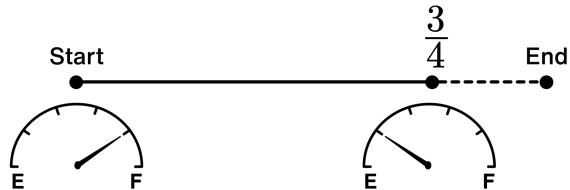
Kayla is  $\frac{3}{4}$  of the way from New York to Boston.

She began with  $\frac{4}{5}$  of a full tank of gas.

She has  $\frac{1}{5}$  of a tank of gas left.

Does she have enough gas to reach Boston?

Show or explain your thinking.

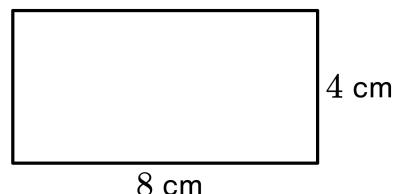
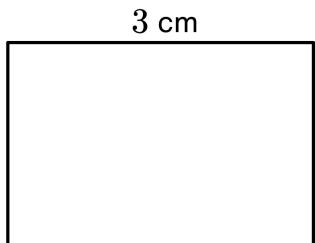
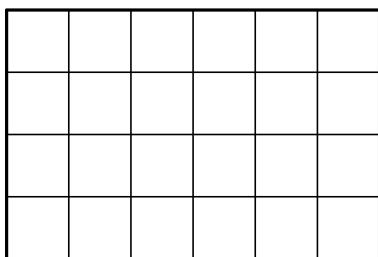
**Reflect**

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Calculate the area of each rectangle.



\_\_\_\_\_ square units

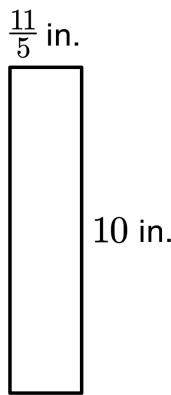
\_\_\_\_\_ square centimeters

\_\_\_\_\_ square centimeters

## Practice

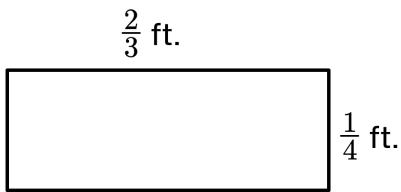
Calculate the area of each rectangle.

1.1



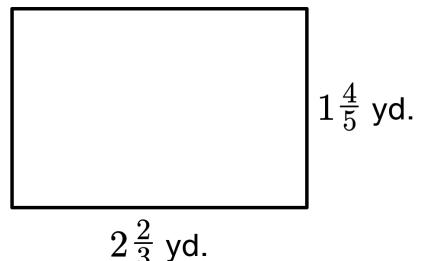
\_\_\_\_\_ square inches

1.2



\_\_\_\_\_ square feet

1.3

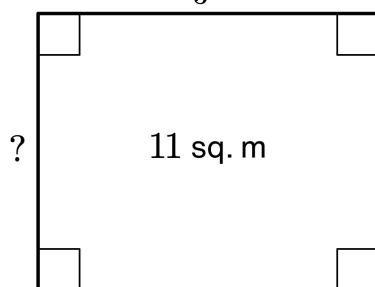


\_\_\_\_\_ square yards

2.1 Calculate the unknown side length of the rectangle.

2.2 Check your answer by multiplying it by  $3\frac{2}{3}$ .

$3\frac{2}{3}$  m



Is the product 11 square meters?

**Unit 6.4, Lesson 12: Practice Problems**

3. Antwon's bookshelf is 42 inches long. How many  $1\frac{1}{2}$ -inch-wide books fit on his bookshelf?

Explain or show your reasoning.

How many groups of  $1\frac{2}{3}$  are in:

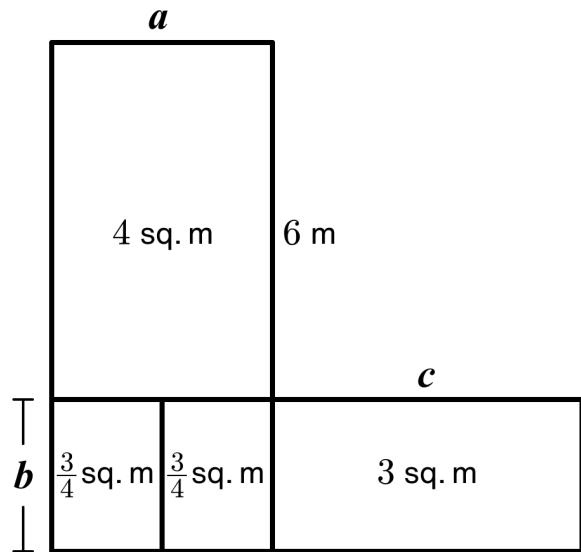
4.1.  $\frac{5}{6}$ ?

4.2.  $4\frac{1}{3}$ ?

4.3.  $1\frac{5}{6}$ ?

**Explore**

Determine the lengths of  $a$ ,  $b$ , and  $c$ .

**Reflect**

1. Put a star next to a question that looked more difficult to solve than it really was.
2. Use the space below to ask one question you have or to share something you are proud of.

**Unit 6.5, Lesson 2: Practice Problems**

Name \_\_\_\_\_

**Warm-Up**

Complete each equation.

$56 + \underline{\quad} = 100$

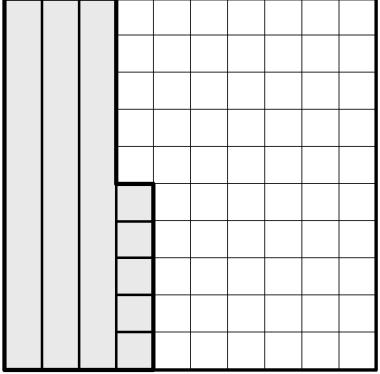
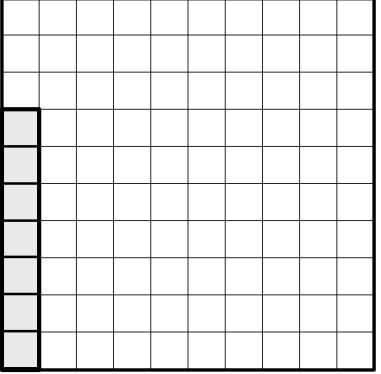
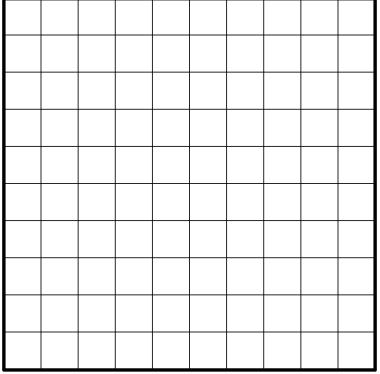
$0.56 + \underline{\quad} = 1$

$8 + \underline{\quad} = 100$

$1 - 0.08 = \underline{\quad}$

**Practice**

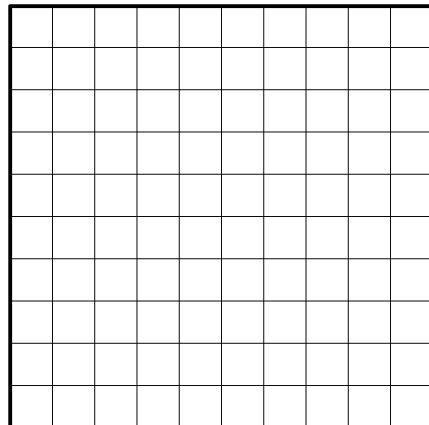
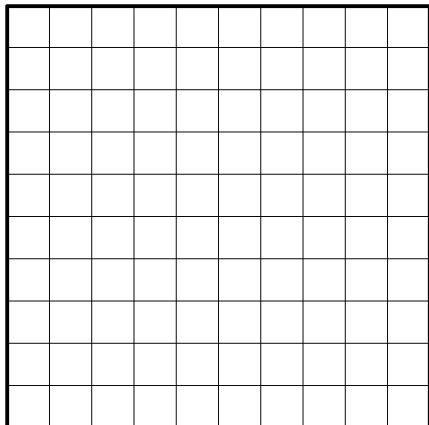
1. The large square is 1. Write the number that goes with the diagram, or make a diagram to go with the number.

Number			0.26
Diagram			

Determine the value of each expression. Use the diagrams if they help you with your thinking.

2.1  $0.24 + 0.607$

2.2  $0.15 - 0.08$



3. Select **all** the expressions that are greater than 1.

$0.52 + 0.49$

$0.7 + 0.04$

$0.85 + 0.072$

A school band has 70 students. 50% of them are sixth graders, 30% are seventh graders, and the rest are eighth graders.

- 4.1 How many band members are sixth graders?

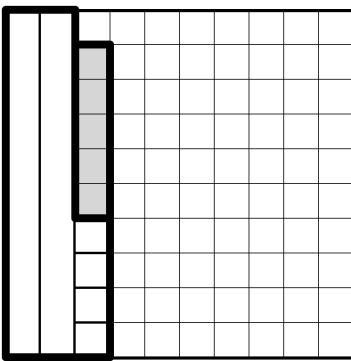
- 4.2 How many band members are seventh graders?

- 4.3 What **percent** of the band members are eighth graders? Explain or show your reasoning.

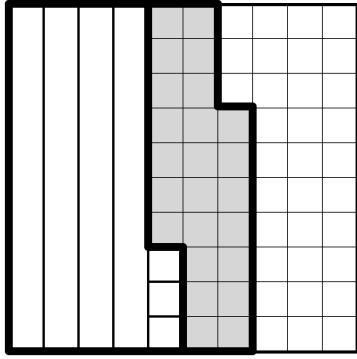
## Explore

Determine the equation that represents each diagram.

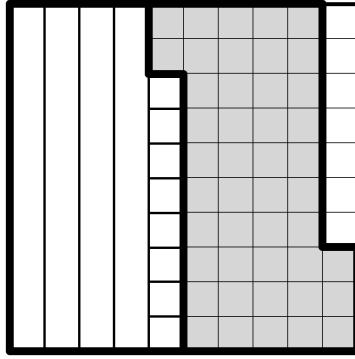
Example



$$0.29 - 0.05 = 0.24$$



=



=

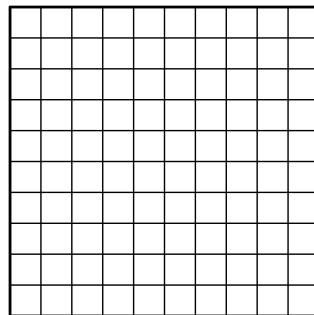
## Reflect

1. Put a heart next to the problem you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

Show  $0.2 + 0.31$  by shading in the diagram.

What is the value of  $0.2 + 0.31$ ?

**Practice**

1. Here is how three students calculated  $7.2 - 3.67$ . Whose work is correct?

A.

$$\begin{array}{r} 7.2 \\ - 3.67 \\ \hline 3.05 \end{array}$$

B.

$$\begin{array}{r} 07.2 \\ - 3.67 \\ \hline 3.05 \end{array}$$

C.

$$\begin{array}{r} 7.20 \\ - 3.67 \\ \hline 3.53 \end{array}$$

Fill in the blanks on the addition and subtraction problems to make them true.

2.1

$$\begin{array}{r} 1.036 \\ + \boxed{\phantom{0}\phantom{0}\phantom{0}} \\ \hline 4.000 \end{array}$$

2.2

$$\begin{array}{r} 38.60 \\ - 6.75 \\ \hline \boxed{000}.5 \end{array}$$

2.3

$$\begin{array}{r} 241.76 \\ - 2.18 \\ \hline \boxed{000.}8 \end{array}$$

The label on a bag of chocolates states that there are 0.384 pounds of chocolates.

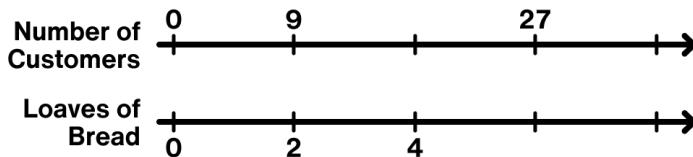
The actual weight of the chocolates is 0.3798 pounds.

- 3.1 Are the chocolates heavier or lighter than the weight stated on the label?    3.2 How much heavier or lighter are the chocolates than stated on the label?

Explain how you know.

For every 9 customers, a chef prepares 2 loaves of bread.

- 4.1 Complete the double number line and table below.



Customers	Loaves
9	2
	4
27	
	14
1	

- 4.2 How many loaves are needed for 63 customers?
- 4.3 How many customers can be fed if the chef prepares 20 loaves?
- 4.4 How much of a loaf of bread does each customer get?

## Explore

In the example on the right, four decimal numbers are created from the grid. They sum to 1.29.

Using the digits 0–9 without repeating, fill in the grid below. Make the sum as close to 1 as possible.

### Example

1	2	→ 0.12	0.12
			+ 0.75
7	5	→ 0.75	+ 0.17
			+ 0.25
			1.29

## Reflect

- Circle the question you spent the most time on.
- Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$$20 \cdot 40$$

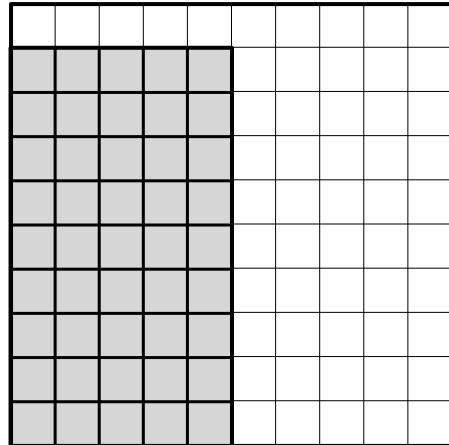
$$200 \cdot 40$$

$$2 \cdot 40$$

$$2 \cdot (0.4)$$

## Practice

- 1.1 Explain why the diagram represents  $(0.5) \cdot (0.9)$ .



- 1.2 What is the value of  $(0.5) \cdot (0.9)$ ?

2. Select **all** the expressions that have the same value as  $(0.05) \cdot (0.6)$ .

$5 \cdot \frac{1}{100} \cdot 6 \cdot \frac{1}{10}$       $5 \cdot 6 \cdot \frac{1}{1000}$       $5 \cdot (0.001) \cdot 6 \cdot (0.01)$      0.03     0.003

3. A student attempted to multiply  $(0.03) \cdot (0.07)$ .

Find the mistake in the student's work.

Then determine the correct value of the expression.

$$0.03 \times 0.07$$

$$\frac{3}{100} \cdot \frac{7}{100}$$

$$\frac{21}{100}$$

$$0.21$$

Determine the value of each expression.

4.1  $(0.3) \cdot (0.2)$

4.2  $(0.5) \cdot (0.02)$

4.3  $(1.2) \cdot 5$

Determine the value of each expression.

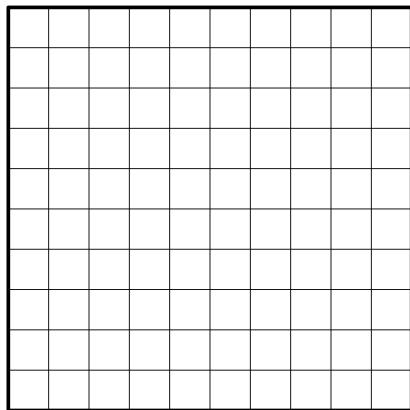
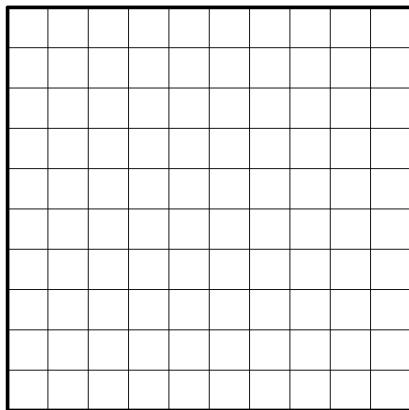
5.1  $0.401 + 9.28$

5.2  $1.075 + 27.105$

5.3  $33.1 + 1.95$

## Explore

Using the digits 0–9, without repeating, fill in each blank to make both equations true. Use the diagrams if they help you with your thinking.



$0.\square \cdot 0.\square = 0.24$

$0.\square \cdot 0.\square = 0.24$

## Reflect

1. Put a heart next to a question that you understand well.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the product of each number and 0.01.

322.1

0.118

1350.1

7.04

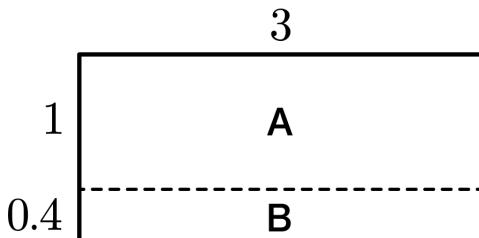
## Practice

Here is a diagram that represents  $3 \cdot (1.4)$ .

- 1.1 Determine the areas of A and B.

$$A =$$

$$B =$$



- 1.2 What is  $3 \cdot (1.4)$ ?

Kala made an error while multiplying  $(5.2) \cdot (2.7)$ .

$$5.2 \cdot 2.7$$

- 2.1 Find the error and explain why it is incorrect.



- 2.2 What is  $(5.2) \cdot (2.7)$ ? Show or explain your reasoning.

$$10 + 0.4 + 3.5 + 1.4 = 15.3$$

3. Draw an area diagram that shows  $(2.5) \cdot (1.4)$ .

Determine the value of each expression.

4.1  $(0.5) \cdot (0.9)$

4.2  $(3.6) \cdot (0.53)$

4.3  $(0.34) \cdot (0.02)$

5. A candy costs \$1.59 at the store. Tariq pays with seven quarters (\$1.75). How much change should he receive?

Complete the calculations so that each problem is correct.

6.1

$$\begin{array}{r} 2.3 \\ + 0.64 \\ \hline 9.05 \end{array}$$

6.2

$$\begin{array}{r} 2.3 \\ + 0.64 \\ \hline 9.02 \end{array}$$

6.3

$$\begin{array}{r} 4.3 \\ + 0.15 \\ \hline 6.02 \end{array}$$

6.4

$$\begin{array}{r} 1.5 \\ + 0.38 \\ \hline 1.04 \end{array}$$

## Explore

Determine the unknown value in the multiplication diagram below.

3	
1.5	0.05
0.24	?

## Reflect

1. Put a star next to one question you are still wondering about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$20 \cdot 5$

$20 \cdot 0.8$

$20 \cdot 0.04$

$20 \cdot 5.84$

## Practice

1.  $3 \cdot 65 = 195$ . Explain how that could be used to find  $(0.03) \cdot (0.65)$ .

2. Maia wrote this expression to help her multiply  $(4.5) \cdot (0.17)$ .

$$45 \cdot 17 \cdot \frac{1}{10} \cdot \frac{1}{100}$$

If  $45 \cdot 17 = 765$ , then what is  $(4.5) \cdot (0.17)$ ?

3. Select **all** of the expressions that have a product of 0.042.

$0.07 \cdot 0.6$       $0.7 \cdot 0.06$       $0.07 \cdot 0.06$       $7 \cdot 0.06$       $2.1 \cdot 0.02$

Determine the value of each expression using any strategy.

4.1  $(5.4) \cdot (2.4)$

4.2  $(1.01) \cdot (3.5)$

5. A pound of blueberries costs \$3.50 and a pound of clementines costs \$2.50.  
What is the total cost of 0.6 pounds of blueberries and 1.8 pounds of clementines?

Amari bought 12 mini muffins for \$5.40.

- 6.1 At this rate, what is the price of 4 mini muffins?

- 6.2 How many mini muffins can Amari buy with \$4.00?

Explain or show your reasoning. Use the table if it helps you with your thinking.

Number of Mini Muffins	Price (dollars)
12	5.40

## Explore

Using the digits 0–9, without repeating, fill in each blank to make a true equation.

$$0.\square \times \square.\square = 0.\square \times \square.\square$$

## Reflect

- Put a question mark next to a question you were feeling stuck on.
- Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the value of each expression.

$400 \div 8$

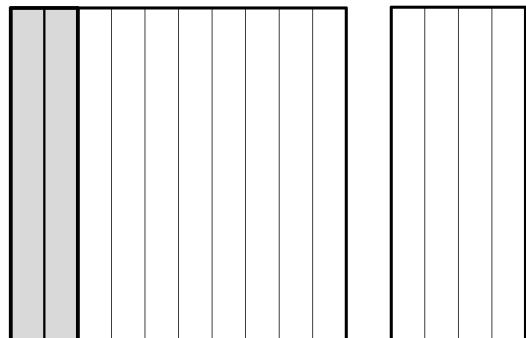
$80 \div 8$

$16 \div 8$

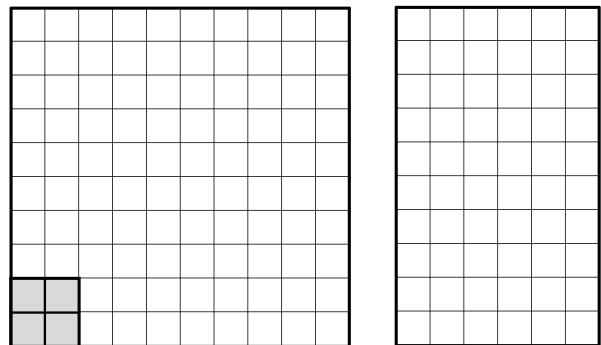
$496 \div 8$

## Practice

1. Determine the value of  $1.4 \div 0.2$ . Use the diagram if it helps you with your thinking.



2. Determine the value of  $1.6 \div 0.04$ . Use the diagram if it helps you with your thinking.



- 3.1 Select **all** of the expressions that have the same value as  $3.5 \div 0.05$ .

$35 \div 5$

$350 \div 5$

$35 \div 0.5$

$\frac{35}{100} \div \frac{5}{100}$

$\frac{35}{10} \div \frac{0.5}{10}$

- 3.2 Write another expression that has the same value as  $3.5 \div 0.05$ .

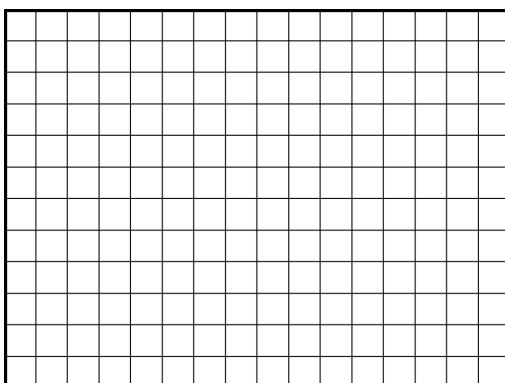
4. Xavier was multiplying  $1.5 \cdot 0.82$ . He knew that  $15 \cdot 82 = 1230$ .

What is  $1.5 \cdot 0.82$ ?

- A. 0.0123      B. 0.123      C. 1.23      D. 12.3

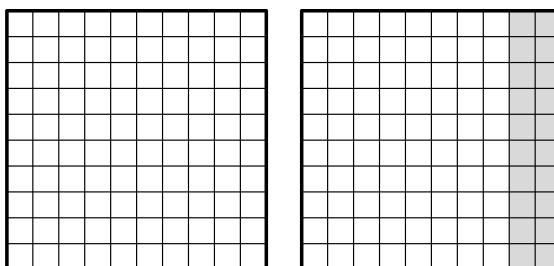
Explain or show your thinking.

5. On the grid, draw a quadrilateral that is not a rectangle that has an area of 18 square units. Show how you know the area is 18 square units.



## Explore

Using the digits 0–9, fill in each blank to create a true equation. Show your answer using the diagram.



$$1.8 \div 0.\square\square = \square\square$$

**Are you ready for more?** Create a true equation using the digits 0–9 without repeating.

## Reflect

1. Put a smiley face next to a question you were stuck on and then figured out.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$80 \div 4$

$12 \div 4$

$1.2 \div 4$

$81.2 \div 4$

## Practice

Here is a long division calculation of  $4809 \div 3$  that is done incorrectly.

- 1.1 Explain how you know that  $4809 \div 3$  is not 163.

- 1.2 What is  $4809 \div 3$ ?

$$\begin{array}{r} 163 \\ 3 \overline{)4809} \\ 3 \\ \hline 18 \\ 18 \\ \hline 009 \end{array}$$

Mariam is using long division to calculate  $623 \div 7$ .

- 2.1 Mariam starts by dividing 62 by 7.

The first digit of the quotient is 8.

Write the number 8 where you think it belongs.

$$7 \overline{)6 \quad 2 \quad 3}$$

- 2.2 Finish using long division to calculate  $623 \div 7$ .

Use long division to calculate each quotient.

3.1

$$5 \overline{)4 \quad 6 \quad 5}$$

3.2

$$12 \overline{)9 \quad 2 \quad 4}$$

3.3

$$3 \overline{)1 \quad 1 \quad 0 \quad 7}$$

4. Select **all** of the expressions that have the same value as  $6.4 \div 0.16$ .

$64 \div 16$

$640 \div 16$

$\frac{64}{10} \div \frac{16}{100}$

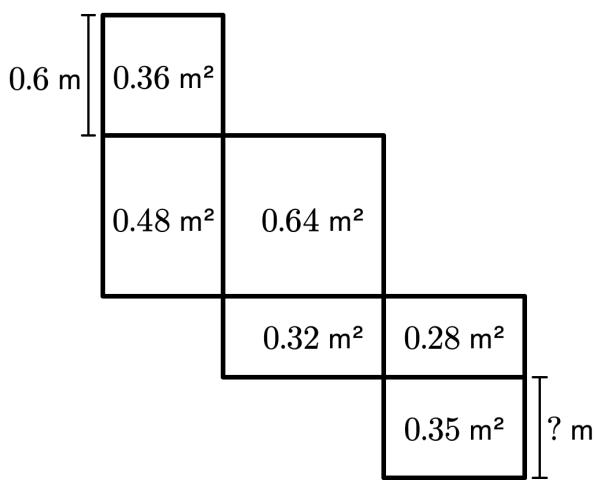
$\frac{64}{10} \div \frac{16}{10}$

5. The mass of one coin is 16.718 grams. The mass of a second coin is 27.22 grams. How much greater is the mass of the second coin than the first?

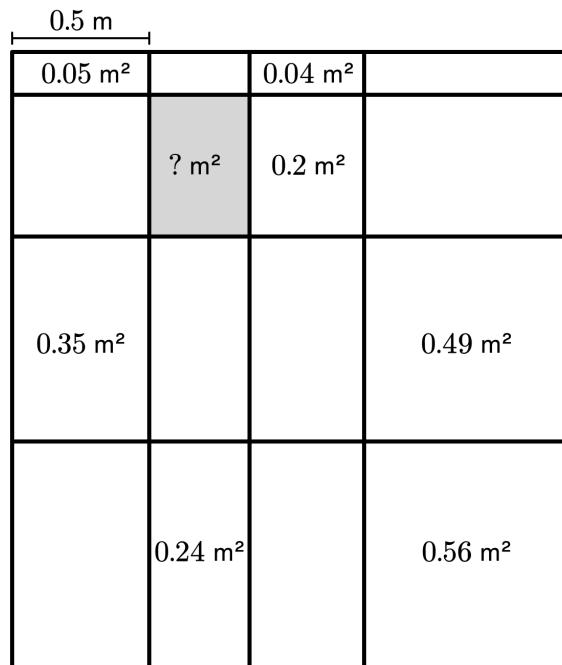
Show your reasoning.

## Explore

Determine the unknown length.



Determine the unknown area.



## Reflect

1. Circle a question you are still curious about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$300 \div 3$

$60 \div 3$

$12 \div 3$

$372 \div 3$

## Practice

1. Here are two long division problems. Which one represents  $6 \div 10$ ?

A.

$$\begin{array}{r} 1\ 0 \\ 6 \overline{)1\ 0} \end{array}$$

B.

$$\begin{array}{r} 6 \\ 10 \overline{)6} \end{array}$$

Explain your thinking.

- 2.1 Select **all** the expressions that have the same value as  $4.5 \div 0.09$ .

$\frac{45}{100} \div \frac{9}{100}$

$45 \div 9$

$\frac{450}{100} \div \frac{9}{100}$

$450 \div 9$

- 2.2 What is the value of  $4.5 \div 0.09$ ?

Use long division to determine the value of each expression.

3.1  $99 \div 12$

3.2  $39.54 \div 3$

3.3  $199.8 \div 0.8$

4. Four students set up a lemonade stand. At the end of the day, their profit is \$17.52. How much money do they each have when the profit is split equally?

Show or explain your reasoning.

Determine the missing digits in the subtraction problems.

5.1

$$\begin{array}{r} 5 \\ - \boxed{\phantom{0}}.\boxed{\phantom{0}}\boxed{\phantom{0}} \\ \hline 4.32 \end{array}$$

5.2

$$\begin{array}{r} 1 \\ - \boxed{\phantom{0}}.\boxed{\phantom{0}}\boxed{\phantom{0}}\boxed{\phantom{0}} \\ \hline 0.015 \end{array}$$

5.3

$$\begin{array}{r} 9 \\ - \boxed{\phantom{0}}.\boxed{\phantom{0}}\boxed{\phantom{0}}\boxed{\phantom{0}} \\ \hline 0.863 \end{array}$$

## Explore

Using the digits 0–9, without repeating, fill in each blank to make a true equation.

$$\boxed{\phantom{0}} \div 0.\boxed{\phantom{0}} = \boxed{\phantom{0}} \div 0.\boxed{\phantom{0}}$$

## Reflect

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$10\% \text{ of } 43$

$1\% \text{ of } 43$

$4\% \text{ of } 43$

$14\% \text{ of } 43$

## Practice

Jada's family has a weekly income of \$1150.

- 1.1 Jada's family tries to spend no more than 9% of their weekly income on groceries. How much money is this?
  
- 1.2 Jada's family tries to put 12% of their weekly income into a savings account. How much money is this?
  
- 1.3 Jada's family recently had to spend \$184 on a car repair. What percent of their weekly income is this?  

A. 0.16%	B. 6.25%	C. 16%	D. 62.5%
----------	----------	--------	----------

Show or explain your reasoning.

2. Circle the expression that has the greater value.

$7\% \text{ of } 250$

$70\% \text{ of } 25$

They have the same value.

Show or explain your reasoning.

3. Oliver went to the store and purchased the items shown here. Beef is the most expensive item. Beef is what percent of the total?

Milk (1 gallon) -----	3.61
Beef (1 lb.) -----	7.10
Apples (1 lb.) -----	2.39
Bananas (1 lb.) -----	0.91
Oranges (1 lb.) -----	1.99
Potatoes (1 lb.) -----	1.10
<b>Total -----</b>	<b>\$17.75</b>

4. One ounce of a yogurt contains of 1.2 grams of sugar. How many grams of sugar are in 14.25ounces of yogurt?

- A. 1.71 grams      B. 11.875 grams      C. 15.45 grams      D. 17.1 grams

Determine the value of each expression. Show or explain your thinking.

5.1  $4.4 - 0.72$

5.2  $4 + 1.3 + 0.56$

5.3  $4.34 \div 0.7$

## Explore

Here is the average weekly household income of three states (as of 2021)<sup>1</sup> and the cost of a week's worth of food in each state's capital city.<sup>2</sup> Determine the missing values in the table.

	Arkansas	Oklahoma	Maryland
<b>Weekly income</b>	\$915	\$1 020	
<b>Cost of food for family of 3</b>	\$186.66		\$263.22
<b>Percentage of weekly income</b>		22.9%	16.4%

## Reflect

- Put a star next to a question you are still curious about.
- Use the space below to ask one question you have or to share something you are proud of.

<sup>1</sup> World Population Review, <https://worldpopulationreview.com/state-rankings/median-household-income-by-state>

<sup>2</sup> Numbeo.com, <https://www.numbeo.com/food-prices/>

**Unit 6.6, Lesson 1: Practice Problems**

Name \_\_\_\_\_

**Warm-Up**

Fill in each blank to create a true equation.

$7 + \underline{\quad} = 10$

$\underline{\quad} \cdot 5 = 45$

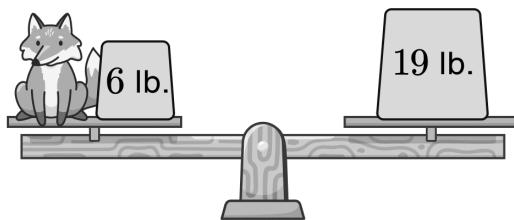
$23 - \underline{\quad} = 11$

$\underline{\quad} \div 4 = 8$

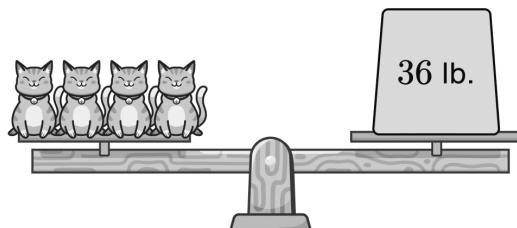
**Practice**

These scales are balanced.

- 1.1 Determine the weight of 1 fox.



- 1.2 Determine the weight of 1 cat.



2. Match each equation to the tape diagram that best represents it.

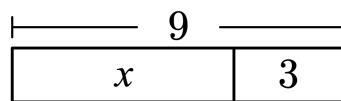
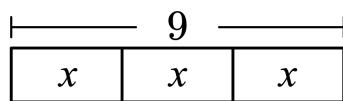
**A.**  $3 \cdot x = 9$

**B.**  $3 + x = 9$

**C.**  $x = 9 - 3$

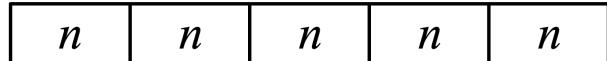
**D.**  $x = 9 \div 3$

**E.**  $x + x + x = 9$



Kwabena is trying to figure out the value of  $n$  in the equation  $5n = 35$ . He begins drawing a tape diagram but isn't sure how to complete it.

- 3.1 Complete Kwabena's tape diagram so it represents the equation
- $5 \cdot n = 35$
- .



- 3.2 Determine the value of
- $n$
- .

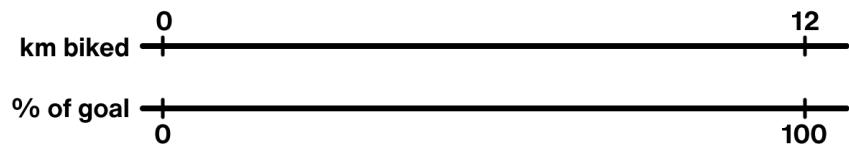
**Unit 6.6, Lesson 1: Practice Problems**

Calculate the price per pound for each item.

4.1 \$2.52 for 4.5 pounds of potatoes.

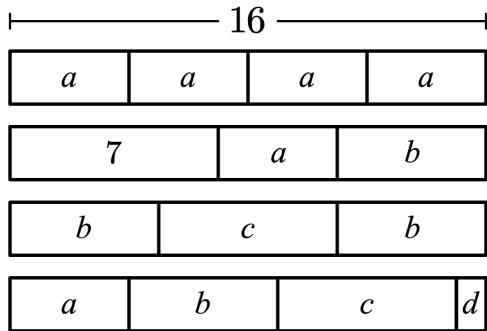
4.2 \$7.75 for 2.5 pounds of broccoli.

5. Adhira set a goal to bike 12 km in a week. After her ride on Tuesday, Adhira's app said she had completed 25% of her goal. How many kilometers has Adhira biked so far?  
Use the double number line if it helps you with your thinking.



## Explore

Determine the values of  $a$ ,  $b$ ,  $c$ , and  $d$ .



## Reflect

1. Star the problem you spent the most time on.
2. Use the space below to ask one question you have or to share something you are proud of.



# Science Mom Lesson 46

## Unit 6.6, Lesson 2: Practice Problems

Name \_\_\_\_\_

### Warm-Up

Select **all** the true equations.

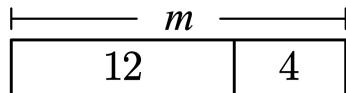
- $5 + 0 = 0$       $15 \cdot 0 = 0$       $1.4 + 2.7 = 4.1$       $\frac{2}{3} \cdot \frac{5}{9} = \frac{7}{12}$       $4 \frac{2}{3} = 5 - \frac{1}{3}$

### Practice

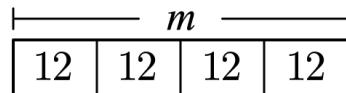
1. Match each equation to a tape diagram.

A. $12 - m = 4$	B. $12 = 4m$	C. $12 + 4 = m$	D. $m \div 4 = 12$
-----------------	--------------	-----------------	--------------------

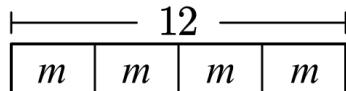
Equation: \_\_\_\_\_



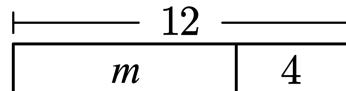
Equation: \_\_\_\_\_



Equation: \_\_\_\_\_



Equation: \_\_\_\_\_



Aaliyah filled a water bottle with 24 ounces of water before school. They drank 15 ounces at lunch. There are  $x$  ounces of water left.

- 2.1 Draw a tape diagram to represent the situation.



- 2.2 Select **all** of the equations that could represent this situation.

- $24 - 15 = x$       $24 + 15 = x$       $x + 15 = 24$       $15x = 24$       $24 \div 15 = x$

- 2.3 For one of the equations you selected above, determine the solution and explain its meaning.

Equation

Solution

Meaning of Solution

**Unit 6.6, Lesson 2: Practice Problems**

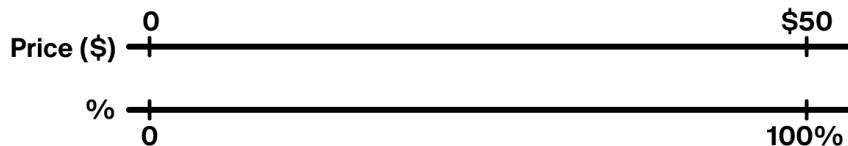
Fill in the blanks to make each equation true.

3.1  $2.83 - 1.6 = \underline{\hspace{2cm}}$

3.2  $\underline{\hspace{2cm}} + 2.1 = 7$

3.3  $\frac{3}{4} \cdot \underline{\hspace{2cm}} = 8$

4. Hailey paid \$40 for a jacket whose regular price was \$50. What percent of the regular price did Hailey pay? Use the double number line if it helps with your thinking.

**Explore**

Using the digits 0–9, without repeating, fill in each blank such that  $x$  is the same value in each equation.

$$\begin{aligned}x &= \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}} \\x &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\x + \underline{\hspace{2cm}} &= \underline{\hspace{2cm}}\end{aligned}$$

**Reflect**

1. Put a heart next to the problem you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Calculate the value of each expression.

$12 + 2.4$

$12 \cdot 2.4$

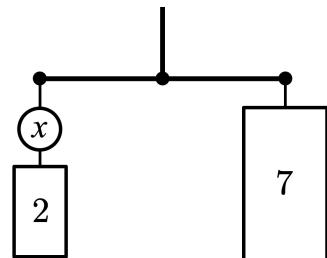
$12 - 2.4$

$12 \div 2.4$

## Practice

1. Anushka says that to balance this hanger, the value of  $x$  must be 7.  
Do you agree with her?

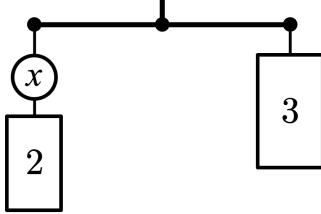
Show or explain your reasoning.



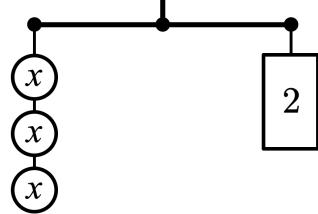
Match each hanger with the equation that it represents. You will have one equation left over.

A. $3 + x = 2$	B. $2 + x = 3$	C. $2x = 3$	D. $3x = 2$
----------------	----------------	-------------	-------------

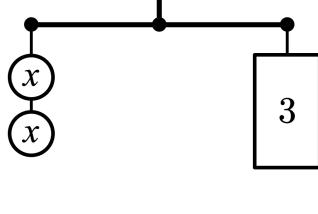
2.1



2.2



2.3



3. Pick two hangers from above and figure out the value of  $x$  that balances each hanger.

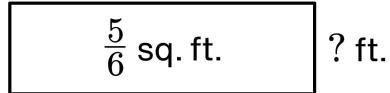


**Unit 6.6, Lesson 3: Practice Problems**

- 4.1 Calculate the area of this rectangle.

 $1\frac{1}{2}$  ft.

- 4.2 Calculate the height of this rectangle.

 $\frac{5}{3}$  ft.

Precious set a goal to save \$20 to buy a new game. How much money will Precious have when she has saved:

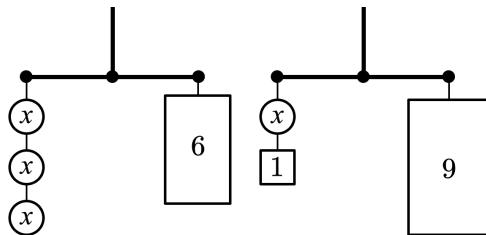
- 5.1 25% of her goal?

- 5.2 75% of her goal?

- 5.3 125% of her goal?

**Explore**

Add or remove shapes on **one** hanger so that the same value of  $x$  balances both hangers.

**Reflect**

1. Put a question mark next to a problem you would like to compare with a classmate.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

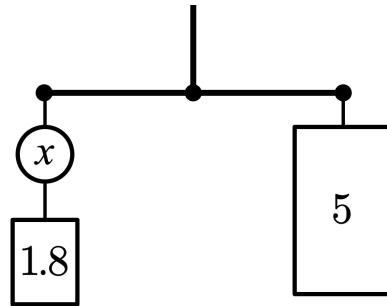
Select **all** the equations that have a solution of  $n = 11$ .

- $2n = 22$       $23 - n = 12$       $4n = 411$       $n \div 1 = 11$       $n - 7 = 3$

## Practice

- 1.1 Determine the value of  $x$  in the equation  $x + 1.8 = 5$ .

Use the hanger if it helps you with your thinking.



- 1.2 Vihaan says the solution to  $x + 1.8 = 5$  is  $x = 6.8$ .

Explain how you know that this is incorrect.

Solve each equation. Draw a hanger or a tape diagram if it helps you with your thinking.

2.1  $4m = 8$

2.2  $\frac{1}{2}a = \frac{5}{8}$

2.3  $10d = 32$

2.4  $w + 5.2 = 17$

2.5  $1.5x = 0.9$

2.6  $24.6 = 6.1 + c$



## Unit 6.6, Lesson 4: Practice Problems

Calculate each product.

$$3.1 \quad 212 \cdot 2$$

$$3.2 \quad 21.2 \cdot 0.2$$

$$3.3 \quad 21.2 \cdot 0.02$$

4. Kweku and Javier each used a different strategy to determine 25% of 60.

Which strategy is correct?

Explain your reasoning.

**Kweku's Strategy**

$$60 \times 25$$

**Javier's Strategy**

$$60 \div 4$$

## Explore

Using the digits 0–9, without repeating, fill in each blank so that the value of  $x$  is the same for each equation on the left and the same for each equation on the right.

$$x = \square$$

$$x + \square = \square$$

$$x = \square$$

$$x + \square = \square$$

## Reflect

1. Circle the question you feel most confident about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Select **all** the equations that have a solution of  $c = 1.5$ .

- $4c = 41.5$       $150 \div c = 100$       $13.5 - c = 10$       $6c = 9$       $0.2c = 0.3$

## Practice

- 1.1 Anika buys 5 notebooks that contain 60 pages each.

Select **all** the equations that represent the **total number of pages**,  $p$ .

- $p = 60 \div 5$       $5 + 60 = p$       $p = 5 \cdot 60$       $p \div 5 = 60$       $5p = 60$

- 1.2 Tiara buys a pack of paper with 200 pages. She splits the paper equally into 5 binders.

Select **all** the equations that represent the **number of pages in each binder**,  $b$ .

- $b = 200 \div 5$       $200 \div b = 5$       $b = 5 \cdot 200$       $b \div 5 = 200$       $5b = 200$

Complete the table by creating matching equations and situations.

Equation	Situation	Meaning of $x$
2.1 $\frac{1}{2} + x = 4$		
2.2	A plant in Zahra's garden grows 0.8 inches taller each week. After $x$ weeks, the plant has grown 6 inches.	



## Unit 6.6, Lesson 5: Practice Problems

Solve each equation.

$$3.1 \quad 6m = 33$$

$$3.2 \quad p + 7.04 = 11.8$$

$$3.3 \quad n + \frac{3}{5} = \frac{8}{10}$$

4. Compare the information given about Triangle C and Triangle D.

Which triangle has the greater area?

Show or explain your thinking.

### Triangle C

Base= 12 inches

Height= 8 inches

### Triangle D

Base= 15 inches

Height= 6.5 inches

## Explore

Using the digits 0–9, without repeating, fill in each blank such that the value of  $x$  is the same in each equation.

$$\square x = \square$$

$$x + \square = \square$$

$$x - \square = \square$$

## Reflect

1. Put a heart next to a question that you understand well.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Evaluate the expression  $3m + 5$  for all the values of  $m$ .

$$m = 7$$

$$m = 0.8$$

$$m = \frac{5}{6}$$

$$m = 2.4$$

## Practice

Oranges cost \$1.25 per pound. How much would it cost to buy:

1.1 2 pounds of oranges?

1.2 5 pounds of oranges?

1.3  $x$  pounds of oranges?

You need red and blue ribbon for a craft project. The instructions say that the red ribbon should be 7 inches longer than the blue ribbon. How long should the red ribbon be if the blue ribbon is:

2.1 10 inches?

2.2 27 inches?

2.3  $x$  inches?

3. 35 riders are on a bus, and  $n$  riders get off at the same stop. In this scenario, what does the expression  $35 - n$  represent?

## Unit 6.6, Lesson 6: Practice Problems

The variable  $s$  represents the number of students in one class in your school.

4.1 What does  $\frac{1}{2}s$  represent?

4.2 What does  $s + 1$  represent?

5. LaShawn's class raised \$500 for a fundraiser. They used 10% of the money to cover the cost of materials, saved 20% for the next fundraising project, and donated the rest.

How much money did LaShawn's class **donate**?

A garbage bin can hold 50 gallons of waste. What percent of the bin would be filled if it had:

6.1 5 gallons of waste?

6.2 30 gallons of waste?

6.3 45 gallons of waste?

## Explore

Select any number to represent  $a$  and use it to complete the puzzle on the right.

$3a$	$+$	$4$	$=$				
$-$			$+$				$-$
$a$	$4a$	$+$	$4a$	$-$		$=$	$5a$
$-$	$+$		$=$				$=$
$a$				$-$	$2a$	$=$	
$-$	$=$				$+$		
$a$	$+ 6a$	$-$		$=$	$4a$		
$=$	$+$			$=$			
		$a$	$a$	$+$		$=$	

## Reflect

- Put a star next to one question you are still wondering about.
- Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Evaluate each expression for  $b = 5$ .

$$3.5b$$

$$6b + 1$$

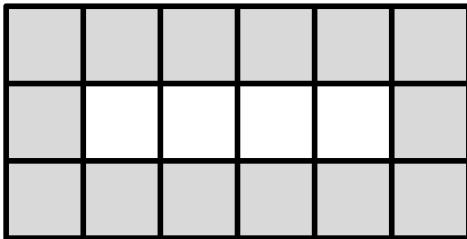
$$\frac{1}{4} + b$$

$$\frac{1}{2}b$$

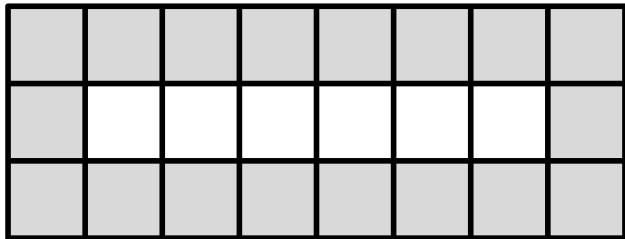
## Practice

For each rectangle, determine how many gray tiles are used to make the border.

1.1

**4-by-1 Rectangle**

1.2

**6-by-1 Rectangle**

- 1.3 Diego says  $2n + 6$  represents the number of gray tiles needed for the border of an  $n$ -by-1 rectangle, like the rectangles above. Explain why his strategy is correct.

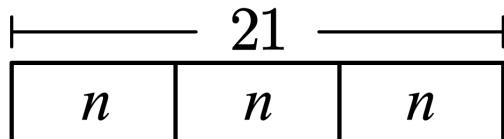
- 2.1 Select **all** the expressions that are equivalent to  $2n + 6$ .

$2 + 6n$       $2(n + 3)$       $n + 3$       $(n + 3) + (n + 3)$       $n + n + 6$

- 2.2 Choose an expression that is **not** equivalent. Explain how you know it is not equivalent.

**Unit 6.6, Lesson 7: Practice Problems**

- 3.1 Write an equation to represent the tape diagram.



- 3.2 Determine the value of  $n$ .

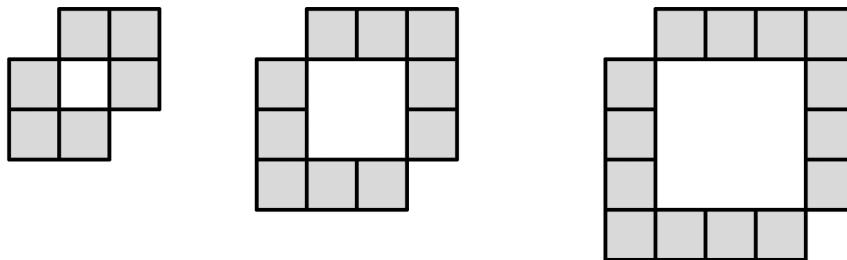
Write an equation to represent each scenario.

- 4.1 Aba's dog was  $5\frac{1}{2}$  inches tall when it was a puppy but is now 14 inches tall. Aba's dog grew  $n$ -inches.

- 4.2 Apples cost \$1.10 per pound. Darius bought  $x$  pounds of apples for a total cost of \$2.75.

## Explore

Write an expression that describes the number of gray tiles for any stage in the visual pattern below. Show your thinking.



Can you see the pattern in a different way that would produce a different expression? Show your thinking.

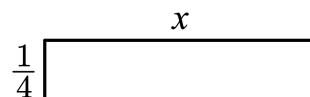
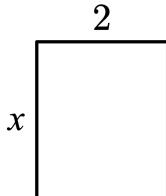
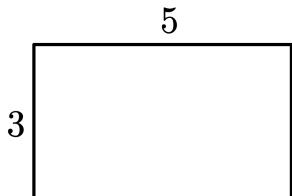
## Reflect

1. Put a question mark next to a question you were feeling stuck on.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Write an expression to represent the area of each rectangle.



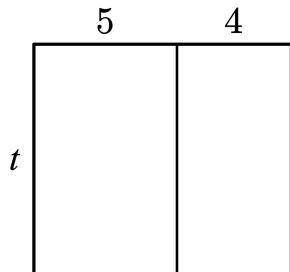
## Practice

1. Select **all** of the expressions that are equivalent to  $4b$ .

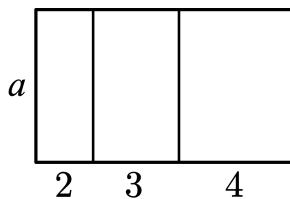
$b + b + b + b$         $b + 4$         $b \cdot b \cdot b \cdot b$         $2b + 2b$

2. Select **all** of the expressions that represent the area of the rectangle:

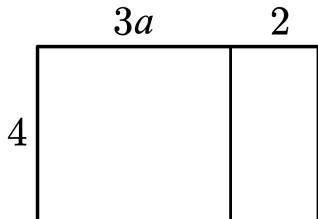
$t + 5 + 4$         $5t + 4t$         $9t$   
  $4 \cdot 5 \cdot t$         $(5 + 4)t$



3. Zola wrote the area of the rectangle as  $2a + 3a + 4a$ . Amir wrote the area as  $(2 + 3 + 4)a$ . Explain why they are both correct.



4. Write two equivalent expressions that could be used to represent the area of the rectangle.



Expression 1

Expression 2

**Unit 6.6, Lesson 8: Practice Problems**

Titus's aunt is 17 years older than him. How old will his aunt be when Titus is:

5.1 15 years old?

5.2 30 years old?

5.3  $x$  years old?

Solve each equation. Show your thinking. Use a diagram if it helps.

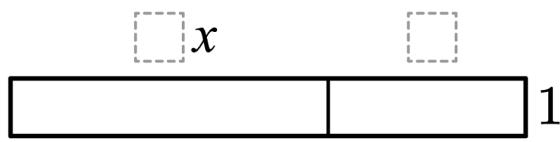
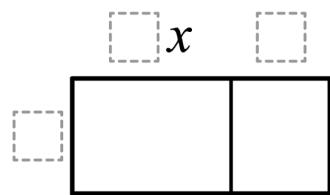
6.1  $10m = 25$

6.2  $13.65 = h + 4.88$

6.3  $k + \frac{1}{4} = 5\frac{1}{8}$

**Explore**

Using the digits 0–9, without repeating, fill in the blanks such that each rectangle has the same area.

**Reflect**

1. Put a smiley face next to a question you were stuck on and then figured out.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the greatest common factor (GCF) for each pair of numbers.

6 and 8

10 and 50

14 and 21

## Practice

1. Select **all** of the expressions that are equivalent to  $4x + 8$ .

$4(x + 2)$

$(4 + 8)x$

$2(2x + 4)$

$2(2x + 6)$

Complete the table by writing expressions that represent the area of each rectangle.

	Area Model	Product of Two Factors	Sum of Two Terms
2.1			$8 + 2x$
2.2		$5(m + 3)$	
2.3			

3. Latifa and Joel are trying to rewrite  $8y + 24$  as a product of two factors. Are Latifa's and Joel's expressions both equivalent to  $8y + 24$ ?

Explain your thinking.

Latifa's Expression  
 $8(y+3)$

Joel's Expression  
 $2(4y + 12)$



## Unit 6.6, Lesson 9: Practice Problems

Complete the table by filling in the missing version of each expression. Draw a model if it helps with your thinking.

	Product of Two Factors	Sum or Difference of Two Terms
4.1		$4x - 8$
4.2	$(6 + 8)d$	
4.3		$10m + 7m$
4.4	$3(2b + 5)$	
4.5	$6(u - 2t)$	

Solve each equation.

$$5.1 \quad x + 5 = 11$$

$$5.2 \quad 0.6y = 1.8$$

$$5.3 \quad 5w = 17.5$$

## Explore

The area of a rectangle is  $30 + 12x$ . List at least three possibilities for the length and width of the rectangle.

## Reflect

1. Circle a question you are still curious about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of each expression.

$3 + 3 + 3 + 3$

$3 \cdot 3 \cdot 3 \cdot 3$

$4(3)$

$3^4$

## Practice

1. Complete the table.

Expression With Exponent	Expression Without Exponent
$3^5$	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
	$2 \cdot 2 \cdot 2 \cdot 2$
$4^3$	
$5^1$	
	$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}$
$(\frac{1}{3})^4$	

2. Select **all** the expressions that are equal to 16.

$8^2$

$2^4$

$2^8$

$4^2$

$16^1$

3. Here are four expressions. Circle two expressions that have the same value.

$6 + 6 + 6$

$6^3$

$3^6$

$3 \cdot 6$

Explain how you know they are equivalent.

**Unit 6.6, Lesson 10: Practice Problems**

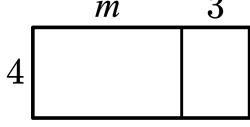
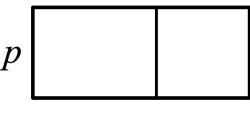
Solve each equation.

4.1  $a - 2.01 = 5.5$

4.2  $b + 2.01 = 5.5$

4.3  $10c = 13.71$

5. Write two expressions to represent the area of each rectangle.

Rectangle	Product	Sum
		
		

## Explore

What value of  $a$  makes both of these equations true? Explain how you know.

$$a^2 = 2^a \qquad a^4 = 4^a$$

## Reflect

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the value of each expression.

$$3(5)$$

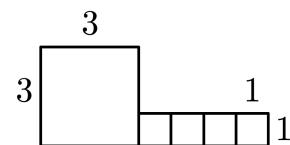
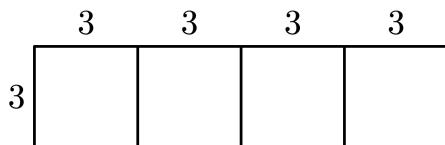
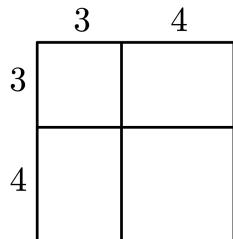
$$3(5) + 2$$

$$3(5 + 2)$$

$$3(2 + 5)$$

## Practice

Here are three different figures.



- 1.1 Match each figure with an expression that describes its area.

$$4 \cdot 3^2$$

Figure \_\_\_\_\_

$$3^2 + 4$$

Figure \_\_\_\_\_

$$(3 + 4)^2$$

Figure \_\_\_\_\_

- 1.2 Calculate the value of each of the expressions from above.

$$4 \cdot 3^2$$

$$3^2 + 4$$

$$(3 + 4)^2$$

2. Here are three more expressions. Calculate their values.  
Draw a picture if it helps you with your thinking.

$$5 + 4^2$$

$$(3 + 2)^3$$

$$2^2 \cdot 5$$

## Unit 6.6, Lesson 11: Practice Problems

Determine the value of each expression.

3.1  $7 + 2^3$

3.2  $9 \cdot 3^1$

3.3  $20 - 2^4$

3.4  $8 \cdot \left(\frac{1}{2}\right)^2$

4. Select **all** the expressions that are equal to  $3^4$ .

  $3 \cdot 3 \cdot 3 \cdot 3$  12  $3 + 3 + 3 + 3$   $9 \cdot 9$  81

A ticket at a movie theater costs \$9.50. One night, the theater sold \$13 433 in tickets.

- 5.1 **Estimate** the number of tickets sold.  
Show or explain your reasoning.

- 5.2 **Calculate** the exact number of tickets sold.  
Show or explain your reasoning.

## Explore

Using the digits 1–9, without repeating, fill in the blanks so that the values are in order from smallest to largest.

Smallest

4<sup>□</sup>, □<sup>4</sup>, □<sup>2</sup>, 3<sup>□</sup>, □<sup>3</sup>, 2<sup>□</sup>

Largest

## Reflect

- Put a heart next to the question you are most proud of.
- Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

Determine the value of each expression.

$$4 \cdot 3 + 2$$

$$4(3 + 2)$$

$$3 + 2 \cdot 4$$

$$3(2 + 4)$$

**Practice**

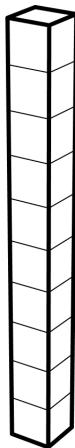
- 1.1 Jalen built a tower out of 10 cubes.

Each cube is 5 inches on a side.

Which expression represents the volume of the tower?

- A.  $5(10)^3$     B.  $10(5)^3$     C.  $10 + 5^3$     D.  $5 + 10^3$

- 1.2 Calculate the volume of the tower.



Determine the value of each expression when  $x = 3$ .

2.1  $x^2$

2.2  $4x^2$

2.3  $2^x$

2.4  $4 + 2^x$

Determine the value of each expression when  $x = 2$ .

3.1  $x^4$

3.2  $4x^3$

3.3  $1 + 3x^3$

3.4  $\left(\frac{1}{3}\right)^x$

**Unit 6.6, Lesson 12: Practice Problems**

For each pair of expressions, circle the expression with the greater value.

---

4.1	$2^3$	$3^2$	They have the same value.
-----	-------	-------	---------------------------

---

4.2	$1^{10}$	$10^1$	They have the same value.
-----	----------	--------	---------------------------

---

4.3	$3^4$	$9^2$	They have the same value.
-----	-------	-------	---------------------------

---

4.4	$\left(\frac{1}{2}\right)^3$	$\left(\frac{1}{3}\right)^2$	They have the same value.
-----	------------------------------	------------------------------	---------------------------

Some say that a restaurant should charge its customers about 3.5 times the cost of the ingredients. How much should a restaurant charge if the ingredients cost:

5.1 \$10?

5.2 \$5?

5.3  $d$  dollars?

5.4 If a restaurant charges \$15.75 for something, how much did the ingredients cost?

**Explore**

Using the digits 0–9, without repeating, fill in the blanks to create equivalent expressions.

Show or explain how you know they are equivalent.

$$\begin{array}{c} \boxed{\phantom{0}} \cdot \boxed{\phantom{0}}^2 \\ (\boxed{\phantom{0}} + \boxed{\phantom{0}})^2 \end{array}$$

**Reflect**

1. Put a star next to a question that looked more difficult to solve than it really was.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Determine the value of each expression.

$$3^2$$

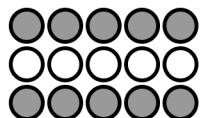
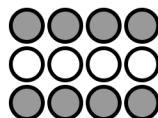
$$2^3$$

$$2^5$$

$$2^1$$

## Practice

1. Here is a pattern of circles. The *independent variable* is  $c$ , the number of circles along the bottom.



List 2–3 *dependent variables* you could count or measure, and assign each variable a letter.

$$c = 2$$

$$c = 4$$

$$c = 5$$

Karima wants to help a community kitchen figure out how much broth they need for their famous chicken soup. Each serving of soup uses 2 cups of broth.

$$s = \text{number of servings of soup}$$

$$b = \text{number of cups of broth}$$

- 2.1 Complete the table.

- 2.2 Which variable is the *independent variable*?

Explain your thinking.

- 2.3 Karima and her sister each wrote an equation to help them understand the relationship.

$$\text{Karima: } s = 2b$$

$$\text{Karima's sister: } b = 2s$$

Who do you agree with? Explain your reasoning.

$s$	$b$
1	
2	
5	
	16



## Unit 6.6, Lesson 13: Practice Problems

Determine the value of each expression when  $x = 4$ .

3.1  $(6 - x)^3$

3.2  $2(6 - x)^3$

3.3  $2^x - 6$

3.4  $\left(\frac{1}{x}\right)^3$

I have a coupon for \$4 off any item at a store. How much would I pay if I buy an item that costs:

4.1 \$10?

4.2 \$22?

4.3  $d$  dollars?

## Explore

Draw a pattern that represents the relationship shown in this table.

See Problem 1 for an example of a pattern.

$n$	$a$
1	5
2	10
3	15

What does  $n$  represent?

What does  $a$  represent?

## Reflect

1. Put a star next to the question you understood best.
2. Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

Determine the value of each expression.

$$3^3$$

$$2(3)^3$$

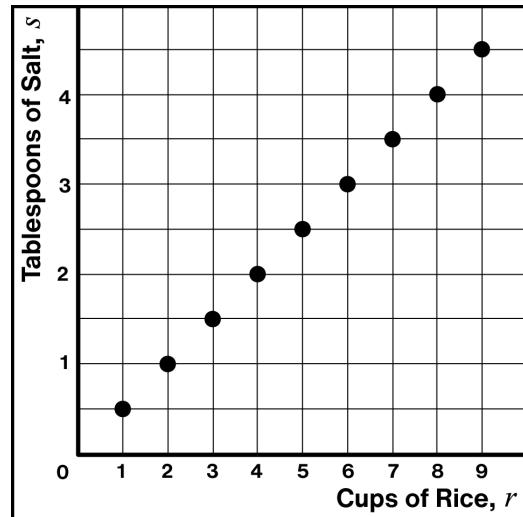
$$3^3 + 4$$

$$2 \cdot 3^3 + 4$$

**Practice**This graph shows the number of tablespoons of salt,  $s$ , needed to make  $r$  cups of rice.

- 1.1 Complete the table to reflect some of the values on the graph.

Cups of Rice, $r$	Tablespoons of Salt, $s$
1	$\frac{1}{2}$
4	
	3



- 1.2 What does the point (8, 4) mean in this situation?
- 

- 1.3 Which equation represents the relationship between the number of tablespoons of salt,  $s$ , and the number of cups of rice,  $r$ ?

A.  $r = \frac{1}{2}s$

B.  $s = 2r$

C.  $s = \frac{1}{2}r$

D.  $s = \frac{1}{2} + r$

Explain how you know your equation is correct.

## Unit 6.6, Lesson 14: Practice Problems

The graph represents the amount of time in hours that it takes a ship to travel various distances in miles.

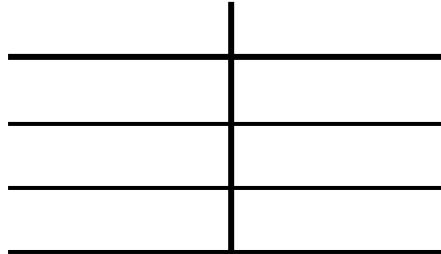
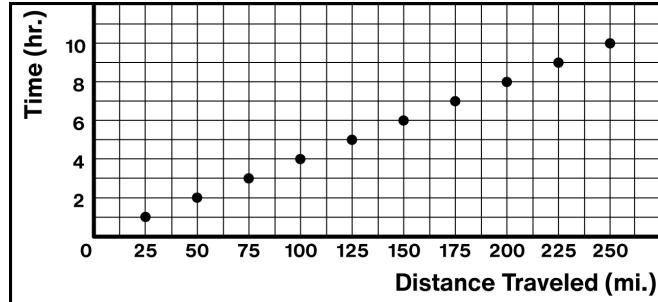
- 2.1 Circle one point on the graph and explain what it means in this situation.

- 2.2 What is the **independent** variable?

- 2.3 What is the **dependent** variable?

- 2.4 Complete the table using any three points on the graph.

Use the top row to label each column with a variable.

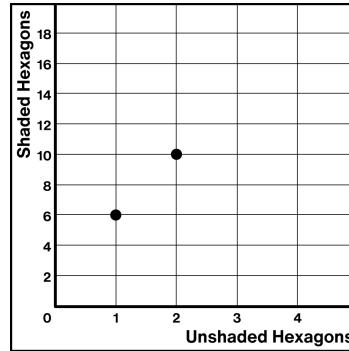
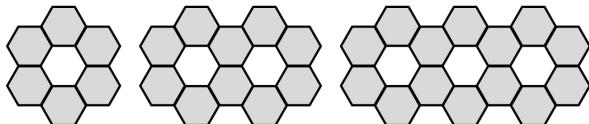


3. Select **all** of the expressions that are equivalent to  $10x - 30$ .

- $10(x - 3)$       $10(x - 30)$       $5(2x - 6)$       $30 - 10x$       $x(10 - 30)$

## Explore

Here is a pattern. Draw the next stage in the pattern and plot the missing points that represent the pattern.



## Reflect

- Circle one question you want to discuss with a classmate tomorrow.
- Use the space below to ask one question you have or to share something you are proud of.

**Warm-Up**

Determine the value of each.

$$25\% \text{ of } 40$$

$$30\% \text{ of } 60$$

$$45\% \text{ of } 90$$

**Practice**

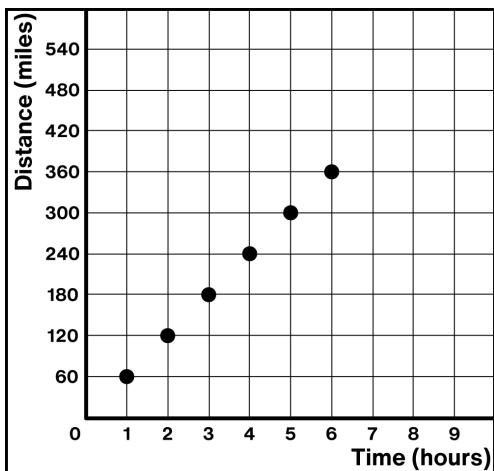
Melissa is selling cookies for \$1.50 each.

- 1.1 Write an equation that represents how much money Melissa earns,  $m$ , for selling a number of cookies,  $c$ .

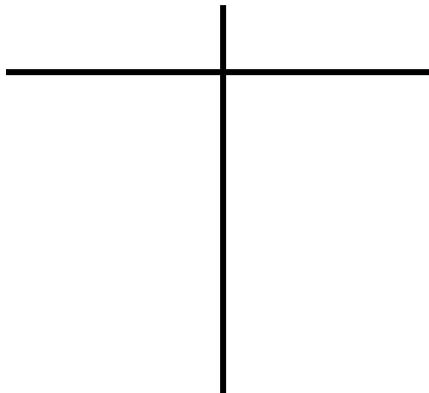
- 1.2 Complete the table that represents this situation.

$c$	$m$
2	
4	
	\$16.50
	\$22.50

This graph represents the distance a car drove,  $d$ , over time,  $t$ .



- 2.1 Create a table to represent the points on the graph.



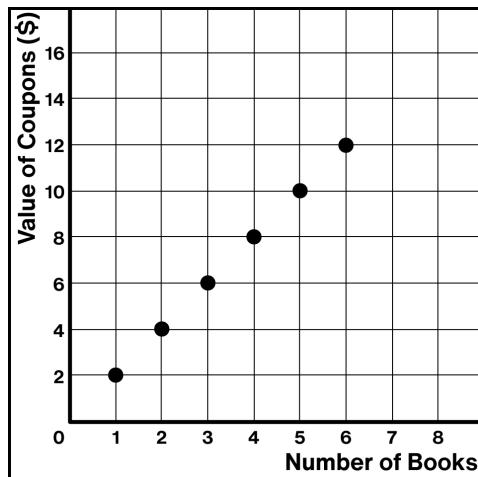
- 2.2 Nathan determined that the equation  $d = 60t$  represents this situation. Explain how the parts of his equation relate to the situation.

**Unit 6.6, Lesson 15: Practice Problems**

3. A bookstore gives out coupons for \$2 off each book. This graph represents the situation.

Circle one point on the graph.

Explain what that point means in this situation.



Bao sells lemonade for \$0.35 per cup.

- 4.1 If Bao earned \$9.80, how many cups of lemonade did he sell?

- 4.2 Bao bought 50 paper cups for \$0.05 each, how much did he spend to buy the paper cups?

## Explore

In your everyday life, what relationship representation do you see most often: equations, tables, or graphs? Explain your thinking and provide examples.

## Reflect

1. Circle a question you want to talk to a classmate about.
2. Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Select **all** the equations that have a solution of  $n = 3$ .

$10n = 103$

$5n = 15$

$\frac{1}{4} + n = \frac{13}{4}$

$n \div 2 = 6$

$\frac{1}{3}n = 3$

## Practice

1. Match each equation to the table that it represents.

A. $p = n + 2$	B. $p = \frac{1}{2}n$	C. $p = 2n$
----------------	-----------------------	-------------

$n$	$p$
10	20
20	40
100	200

$n$	$p$
10	12
20	22
100	102

$n$	$p$
10	5
20	10
100	50

Riya's biking app says that she rides at a speed of 5 miles per hour.

- 2.1 At this speed, how far does Riya ride in 1 hour?

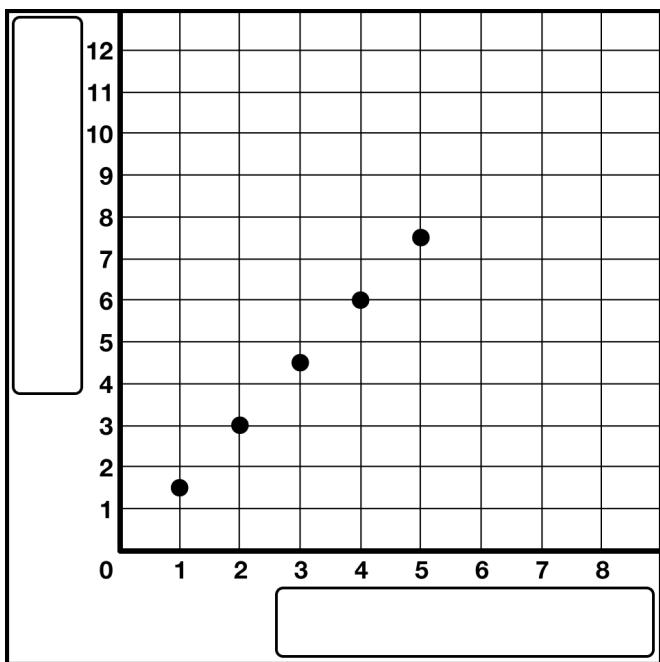
- 2.2 At this speed, how far does Riya ride in 3 hours?

- 2.3 Write an equation for the relationship between Riya's distance biked,  $d$ , and time,  $t$ .

- 2.4 Riya's speed last week could be represented by the equation  $d = 3t$ . What can you say about last week's speed compared to this week's speed? Explain your thinking.

## Unit 6.6, Lesson 16: Practice Problems

- 3.1 Write a situation that could be represented by the graph.  
Label the axes on the graph to match your situation.



- 3.2 Fill in the table using the points on the graph. Label each column with variables to match the graph.

1	1.5
2	
	4.5
4	

4. At a market, 3.1 pounds of peaches cost \$7.75. How much did the peaches cost per pound?  
Explain or show your reasoning.

## Explore

Using the digits 1–9, without repeating, fill in the blanks to make each inequality true.

$$\square \ 2 < 2 \ \square$$
$$\square \ 3 < 3 \ \square$$
$$\square \ 2 > 2 \ \square$$
$$\square \ 3 > 3 \ \square$$

## Reflect

- Star the problem you spent the most time on.
- Use the space below to ask one question you have or to share something you are proud of.



## Warm-Up

Determine the value of  $x$  that makes each equation true.

$$2 \cdot x = 7$$

$$60 \cdot x = 6$$

$$12 \cdot x = 48$$

$$x \cdot \frac{1}{20} = 1$$

$$x =$$

$$x =$$

$$x =$$

$$x =$$

## Practice

Complete each table so that the relationship is proportional.

1.1

$x$	$y$
30	3
120	
	10

1.2

$x$	$y$
1	1.5
3	
	12

1.3

$x$	$y$
15	45
1	
	0

1.4

$x$	$y$
0.2	1
1	
	20

Entrance to a state park costs \$6 per vehicle, plus \$2 per person.

2.1 Complete the table.

2.2 How might you determine the entrance cost for a bus with 50 people?

2.3 Is the relationship between the number of people and the total entrance cost a **proportional relationship**?

Explain how you know.

Number of People in Vehicle	Total Cost (dollars)
2	
3	12
4	
10	

**Unit 7.2, Lesson 2: Practice Problems**

A bakery uses 8 tablespoons of honey for every 10 cups of flour to make bread dough. Some days they bake bigger batches, and some days they bake smaller batches.

3.1 Complete the table.

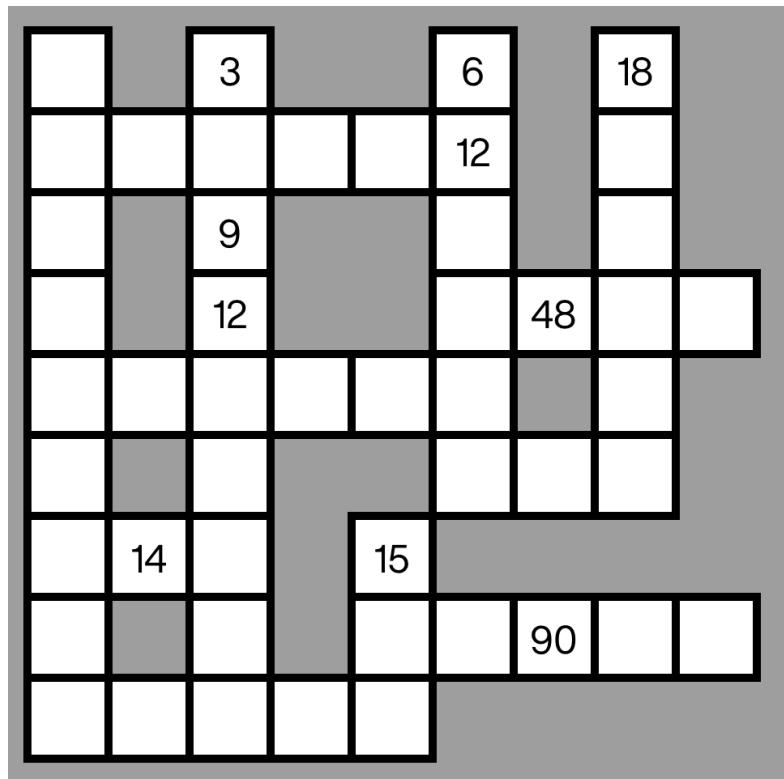
3.2 Explain how you completed the table.

Honey (tbsp.)	Flour (cups)
8	10
20	
13	
	12.5

## Explore

Each row and column contains a sequence of numbers that increase by a constant number (e.g., 4, 8, 12, 16, 20,... ).

Fill in the blank boxes.



## Reflect

1. Put a smiley face next to the question you spent most time on.
2. Use the space below to ask one question you have or to share something you are proud of.

## Warm-Up

Circle **all** of the ratios that are equivalent to  $4 : 7$ .

$8 : 15$

$16 : 28$

$7 : 4$

$20 : 35$

## Practice

When Deven makes chocolate milk, he mixes 2 cups of milk with 3 tablespoons of chocolate syrup. Here is a table that shows how to make batches of different sizes.

- 1.1 Are cups of milk and tablespoons of chocolate syrup in a proportional relationship?  
Explain how you know.

Milk (cups)	Chocolate Syrup (tbsp.)
2	3
8	12
1	$\frac{3}{2}$
10	15

- 1.2 What is the scale factor from the first row to the second row in the table?

- 1.3 What is a constant of proportionality for this relationship?

Where can you see this constant of proportionality in the table?

When you mix two colors of paint in equivalent ratios, the resulting color is always the same.

- 2.1 Complete the table so that each row makes the same shade of purple. In the last row, make up a new pair of numbers.

Explain how you know they will make the same shade of purple.

- 2.2 What is the constant of proportionality for this relationship?

What does it represent?

Blue (cups)	Red (cups)
2	6
1	



## Unit 7.2, Lesson 3: Practice Problems

### Explore

Complete the table below such that  $a$  and  $b$  represent a proportional relationship.

$a$	$b$
0	
1	
	10
$\frac{1}{2}$	
2	

What is the constant of proportionality in this table?

Here is the same table from above. Use a different constant of proportionality to complete this table.

$a$	$b$
0	
1	
	10
$\frac{1}{2}$	
2	

What is the constant of proportionality in this table?

### Reflect

1. Circle the question that you are least confident about on this practice worksheet.
2. Use the space below to ask one question you have or to share something you are proud of.