AchieveMath

Student Book

Volume 1

Name:

Catapult Learning™

Unit 1:

Patterns and the Coordinate Plane

Catapult Learning™

Catapult Learning™

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Fitness Challenge

Complete the ratio tables and number lines to help you answer the questions.

Table 1: Push-Ups

Minutes	0	1	2	3	4
Push-Ups	0	3	6		

1. What is the arithmetic rule for the top row of the table? _____

2. What is the arithmetic rule for the bottom row of the table? _____

3. Show the data from the table on a number line.

4. What is the relationship between the top row of the table and the bottom row of the table? _____

Table 2: Jumping Jacks

Minutes	0	3	6	9	12
Jumping Jacks	0	24	48		

5. What is the arithmetic rule for the top row of the table? _____

6. What is the arithmetic rule for the bottom row of the table? _____

7. Show the data from the table on a number line.

8. What is the relationship between the top row of the table and the bottom row of the table? _____

Cross-Country Running

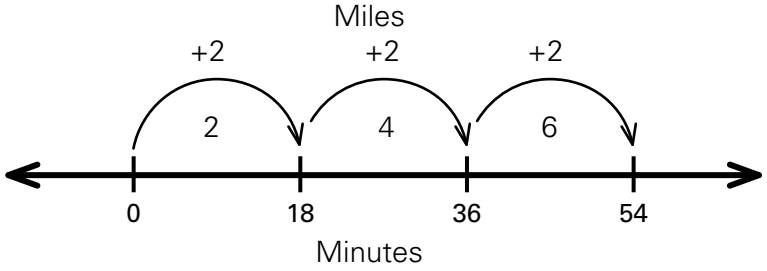
Review the example problem. Then use a **number line** and the ratio table to answer the questions.

Example

Miguel runs a race. He runs **2** miles every **18** minutes. How many minutes will it take Miguel to run 6 miles?

Step 1

Show Miguel's pattern on a number line.



Step 2

Find the arithmetic rule to describe each pattern.

The number of minutes increases by **18**.

The number of miles increases by **2**.

Step 3

Show both patterns in a table.

Minutes	0	18	36	54
Miles	0	2	4	6

It will take Miguel 54 minutes to run 6 miles.

1. Fern runs 1 mile every 12 minutes. Make a number line to show how far Fern runs after 36 minutes.

2. Complete the table to find out how long it takes Fern to run 6 miles.

Minutes	0	12					
Miles	0	1					

It will take Fern _____ minutes to run 6 miles.

3. How would you describe the relationship between the number of minutes Fern runs and the number of miles she runs? _____

_____

_____

Lesson 1 Exit Ticket

Use a **number line** and the ratio table to answer the questions.

1. Kim is doing a 1-minute sit-up challenge. She does 5 sit-ups every 10 seconds. Draw a number line to show how many sit-ups she does after 30 seconds.

2. How long will it take her to do 30 sit-ups? Make a ratio table to find out.

It will take Kim _____ seconds to do 30 sit-ups.

3. What arithmetic rule describes the pattern for the number of seconds? _____

4. What arithmetic rule describes the pattern for the number of sit-ups? _____

5. How would you describe the relationship between the number of seconds and the number of sit-ups? _____

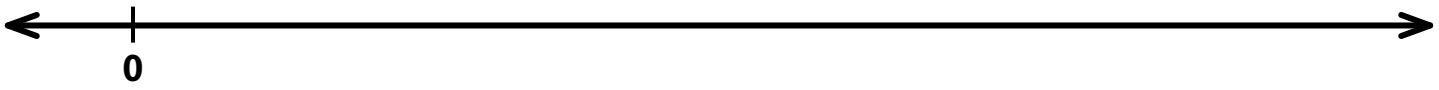
_____

_____

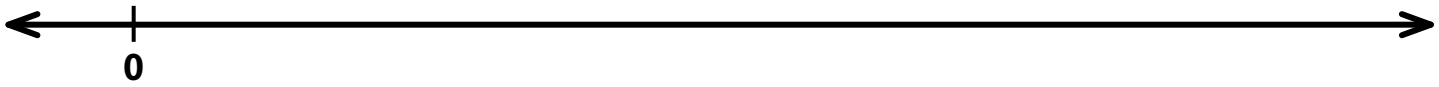
Extra Practice: Pet Tricks

Part 1: Use the number lines to describe the number patterns.

1. Jen is teaching her cat tricks. She gives Cricket 3 treats each time he does a trick correctly.



2. Mei is teaching her parrot tricks. She gives Mr. Squawk 2 treats each time he does a trick correctly.



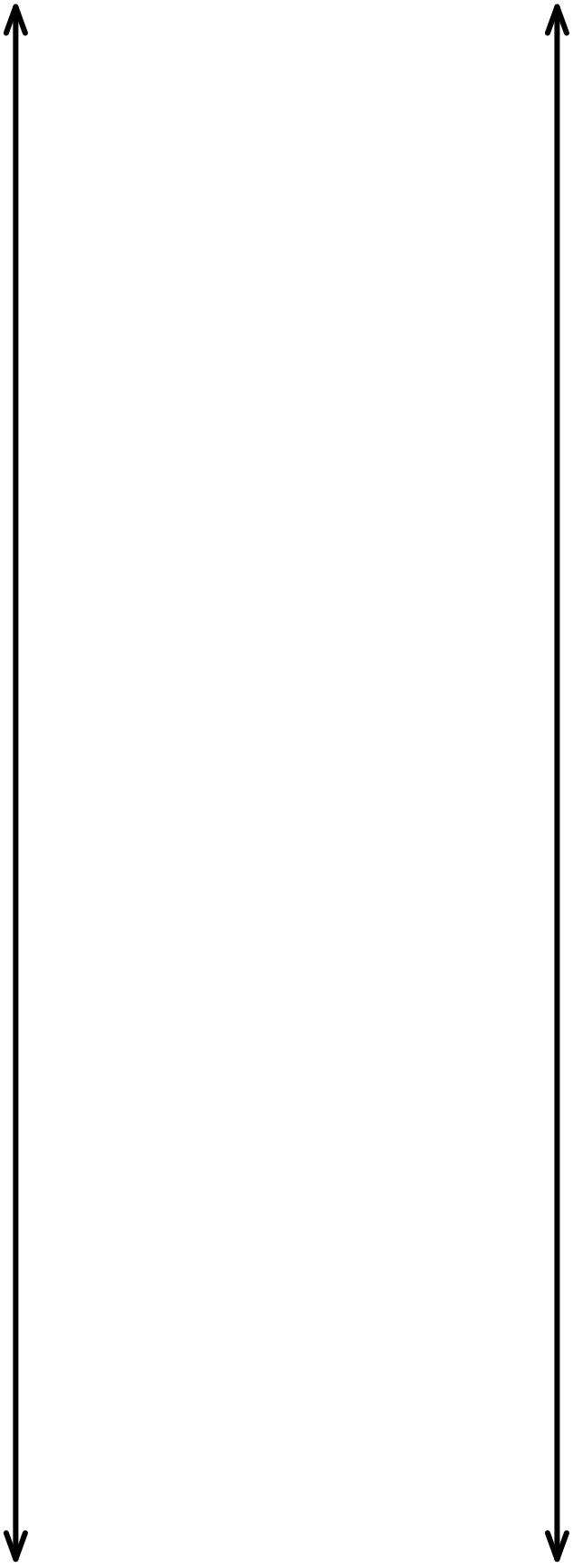
Part 2: Complete the table to show the treats given. Then, answer the questions.

Tricks Performed	Cricket's Treats	Mr. Squawk's Treats
0		
1		
2		
3		
4		
5		
6		

3. If Jen gives Cricket 24 treats, how many tricks did he perform? _____

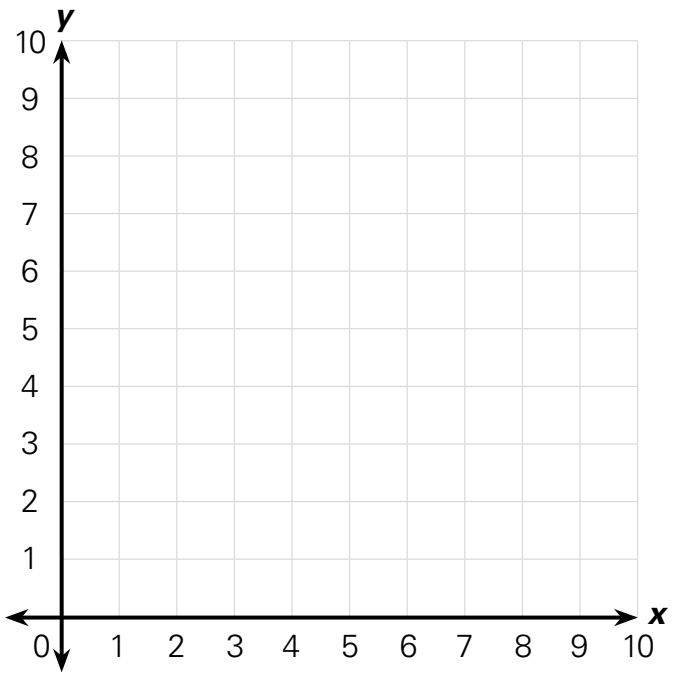
4. How many treats will Mei give Mr. Squawk if he performs the same number of tricks? _____

Open Number Lines



The *Dragon's Revenge*

Plot and label each piece of treasure on the coordinate plane given. Then, describe the location of each point.



1. **Necklace: (6, 9)**

   The necklace is _____ units to the right and _____ units up from the origin.

2. **Goblet: (4, 1)**

   The goblet is _____ units to the right and _____ units up from the origin.

3. **Emerald: (8, 5)**

   The emerald is _____ units to the right and _____ units up from the origin.

4. **Pearl: (0, 3)**

   The pearl is _____ units to the right and _____ units up from the origin.

5. **Silver coin: (1, 8)**

   The silver coin is _____ units to the right and _____ units up from the origin.

6. **Sapphire: (5, 4)**

   The sapphire is _____ units to the right and _____ units up from the origin.

Neighborhood Map

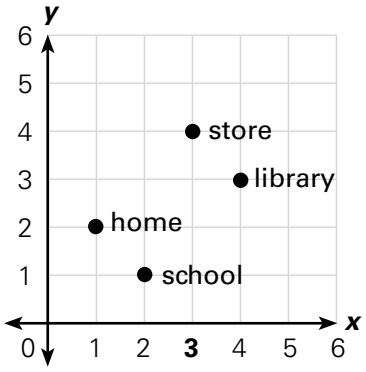
Review the example problem. Then locate the points on the coordinate plane.

Example

What is located at **(3**, **4**) on the map?

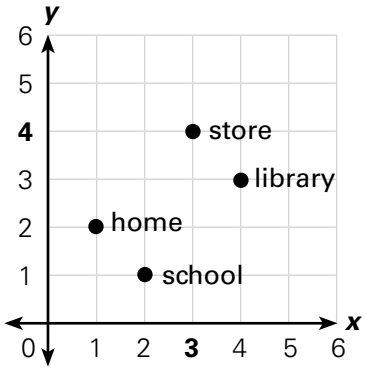
Step 1

Start at the origin. Move along the ***x*-axis** to **3**.



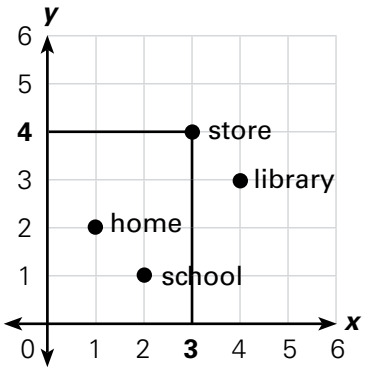
Step 2

Start at the origin. Move along the ***y*-axis** to **4**.



Step 3

Find the point where **3** on the *x*-axis and **4** on the *y*-axis meet.



The store is located at (**3**, **4**) on the map.

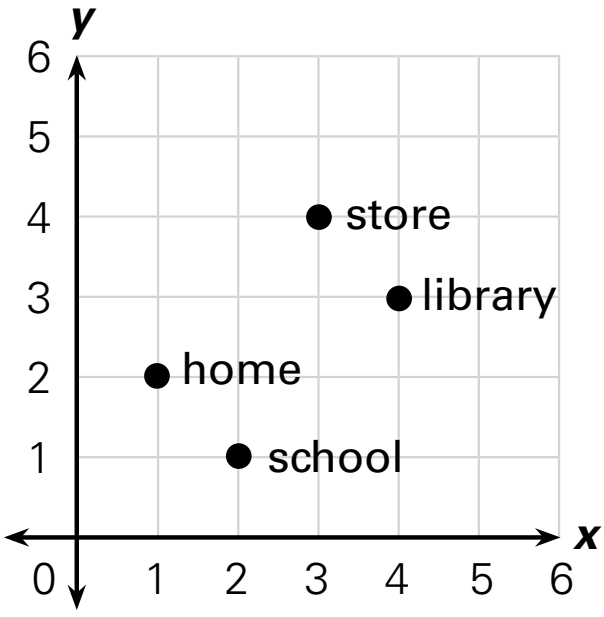
1. What is located at (1, 2) on the map? _____

2. Locate the library. Write the ordered pair for its location. _____

3. Label a bus stop at (1, 5) on the map.

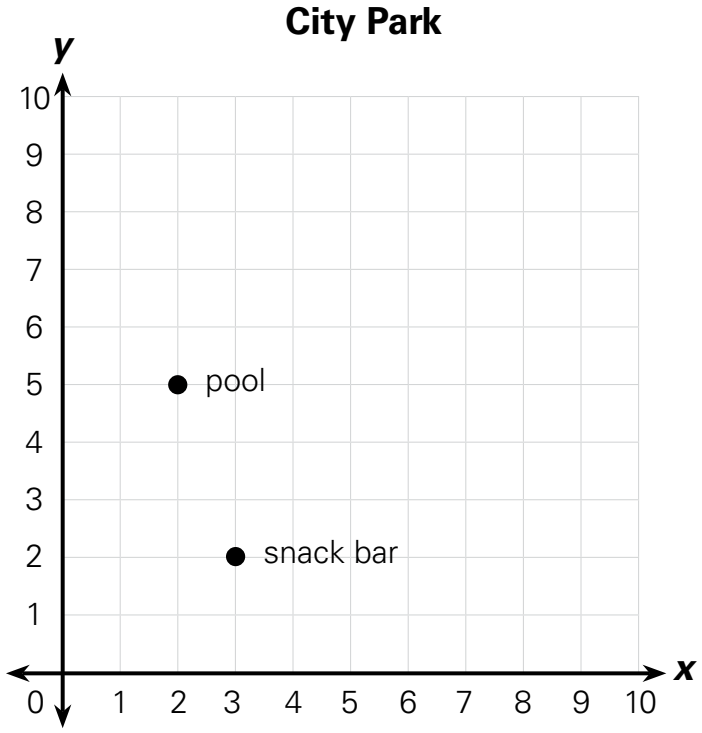
4. Label a park at (6, 6) on the map.

5. Label city hall at (0, 4) on the map.



Lesson 2 Exit Ticket

Read the questions. Then locate the points on the coordinate plane.



1. What is located at (3, 2) on the map? _____

2. Locate the point for the pool. Write the ordered pair for its location _____

3. Label a restroom at (4, 6) on the map.

4. On the coordinate plane, what do the numbers represent in the ordered pair (6, 2)?

_____

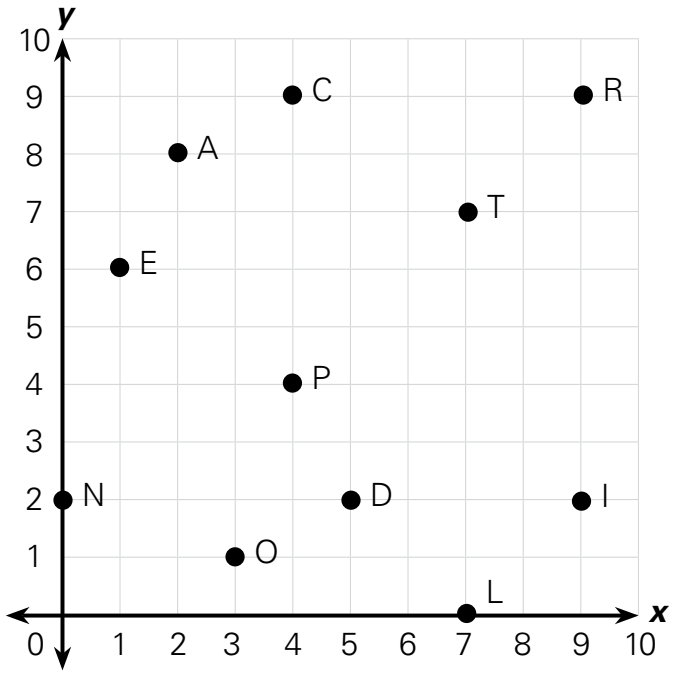
_____

_____

_____

Extra Practice: Mystery Words

Find the point described by each ordered pair. Write the letter for each point above its ordered pair to reveal a vocabulary term.



1.

(4, 9)	(3, 1)	(3, 1)	(9, 9)	(5, 2)	(9, 2)	(0, 2)	(2, 8)	(7, 7)	(1, 6)
(4, 4)	(7, 0)	(2, 8)	(0, 2)	(1, 6)					

2.

(3, 1)	(9, 9)	(5, 2)	(1, 6)	(9, 9)	(1, 6)	(5, 2)
(4, 4)	(2, 8)	(9, 2)	(9, 9)			

Arcade Games

Part 1: Complete the ratio table. Then answer the questions.

Each bowling game costs 3 tokens. You score 5 points for each game.

Tokens Used	Points Scored
3	5
6	10

1. How many tokens will you use to score 15 points? _____ tokens

2. How many reward points will you have after spending 12 tokens? _____ points

3. A prize you want costs 40 points. How many tokens will you need to spend to score enough reward points? _____ tokens

4. How would you describe the relationship between the number of tokens used and the number of points scored? _____

_____

_____

Part 2: Complete the ratio table. Then answer the questions.

Each video game costs 1 token. Each token costs $2.

Tokens Used	Money Spent
0	$
	$
	$
	$
	$

5. If you continue the pattern, how much will you spend on 8 tokens? _____

6. Explain how you solved the problem. _____

_____

Arcade Tickets

Review the example problem. Complete the table. Use graph paper to show the ordered pairs on a **coordinate plane**.

Example

Jace uses **4** tickets to play each game at the arcade. Use a ratio table to find out how may tickets he uses to play **5** games. Then graph the information on a coordinate plane.

Step 1

Identify the two variables.

Each game costs **4** tickets.

Jace wants to play **5** games.

Step 2

Start a ratio table and use the arithmetic rule for each pattern to complete it.

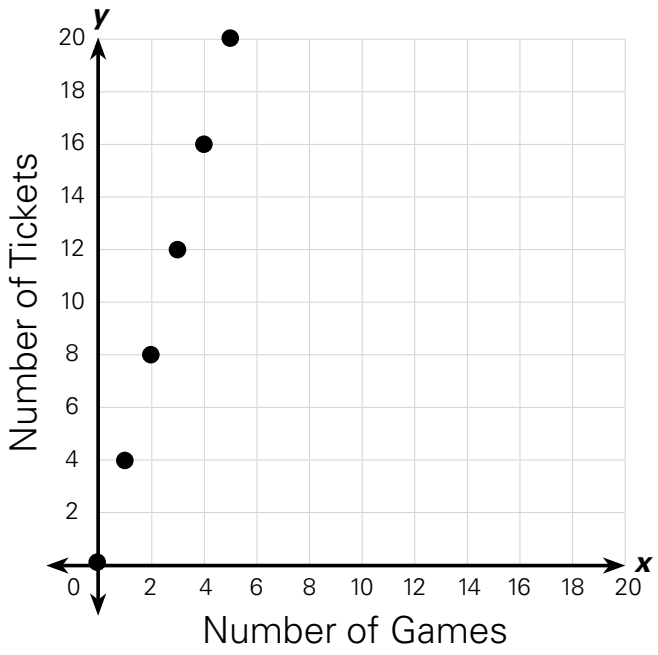
Number of Games (*x*)	Number of Tickets (*y*)
0	0
1	4
2	8
3	12
4	16
5	20
+1	+4

Jace uses 20 tickets to play 5 games.

Step 3

Identify the ordered pairs and graph them.

(0, 0) (1, 4) (2, 8) (3, 12) (4, 16) (5, 20)



Mona uses 3 tickets to play each game. Complete the table and a graph for 6 games.

Number of Games (*x*)	Number of Tickets (*y*)	Ordered Pairs

Lesson 3 Exit Ticket

Read the problem. Then complete the table and graph the ordered pairs.

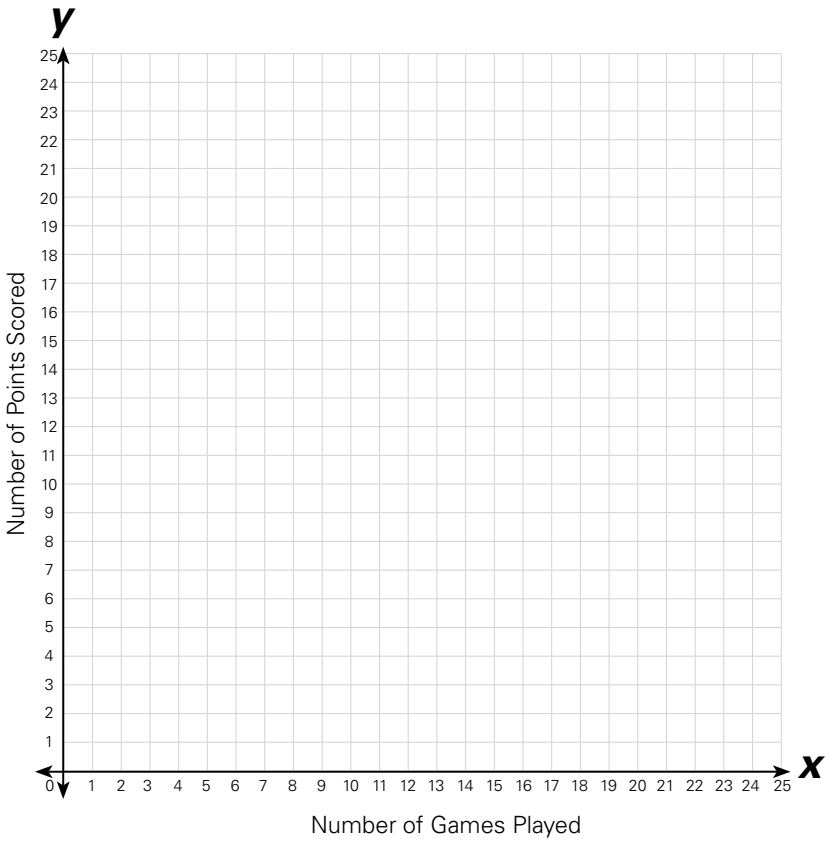
1. Ami scores 6 points every time she plays air hockey. Complete the table to show how many points she will have after each game if she plays 4 games.

Number of Games Played	**Number of** _____
0	
1	
2	

2. What are the arithmetic rules for the number of games and the points scored?

Number of Games _____ Number of Points Scored _____

3. Graph the relationship between the number of games played and the total points.



Extra Practice: Frog Food

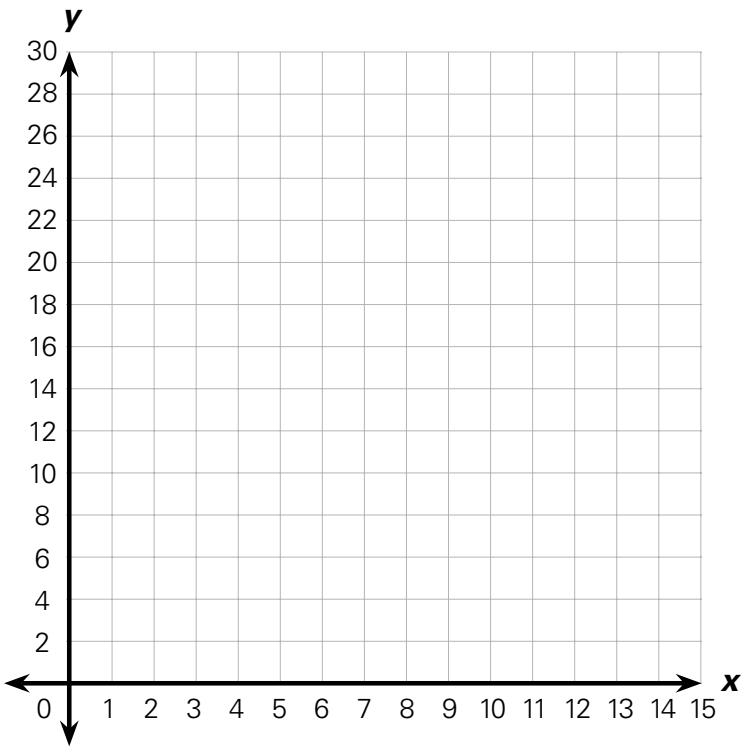
Complete the table and graph to solve the problem.

I want to earn money to buy the following foods for my frog, Frankie.

Food	Cost (dollars)
Crickets	10
Grasshoppers	16
Mealworms	22

I can earn money by selling the frog buttons I make. I make 4 dollars for every 2 buttons I sell. Complete the table and graph the ordered pairs on the coordinate plane.

Number of Buttons	Number of Dollars	Ordered Pair
0	0	(0, 0)
2	4	



What frog food can I buy for Frankie if I sell 8 buttons?

_____

Bike Challenge

Part 1: Complete the ratio table and complete a **coordinate graph** on graph paper to model the problem.

1. Isis bikes 50 miles on the first day of the Bike Challenge. Her donors will contribute $30 for every 10 miles she bikes. Complete the table to show how much money she will raise along the route.

Miles Biked (*x*)	Money Raised (*y*)
0	0
10	30
20	

Part 2: Use the graph you created to answer the questions.

2. What arithmetic rule describes the number pattern for miles biked? _____

3. What arithmetic rule describes the number pattern for money raised?

_____

4. What arithmetic rule describes the relationship between *x* and *y*? _____

5. What does the point (10, 30) on the graph represent? _____

_____

6. What point represents the amount of money Isis raised at the end of the 50 miles?

_____

7. How many miles must Isis ride to raise $75? _____

How do you know? _____

_____

_____

Race Pace

Review the example problem. Then answer the questions.

Example

Isis starts the bike race and travels **6** miles every **1** hour. How long will it take for Isis to reach the 27-mile marker? Use a ratio table and coordinate graph to help you.

Step 1

Identify the arithmetic rules and complete a ratio table.

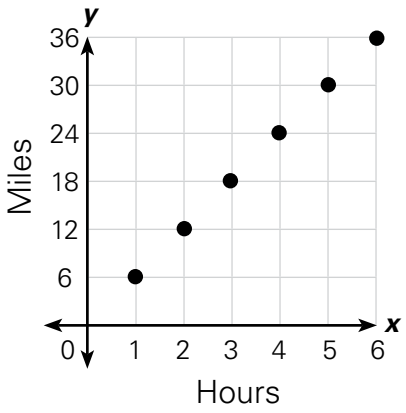
The rule for number of hours is +**1**.

The rule for number of miles is +**6**.

Number of Hours (x)	Number of Miles (y)
0	0
1	6
2	12
3	18
4	24
5	30
6	36

Step 2

Plot the points on a coordinate graph.



Step 3

Look for patterns in the graph and table to answer the question.

27 miles is halfway between 24 and 30 miles.

Isis will reach the 27-mile marker at a time halfway between 4 and 5 hours.

Isis will reach the 27-mile marker at 4 and 1/2 hours.

1. What does the point (3, 18) represent on the graph? _____

_____

2. If Isis continues to ride 6 miles per hour, how far will she ride in 7 hours? _____

3. Today Isis stops at mile 54. How many hours did she ride today? _____

4. How many hours will it take Isis to complete the full 150-mile ride if she maintains her pace of 6 miles per hour? _____

How do you know? _____

_____

_____

Lesson 4 Exit Ticket

Complete the ratio table and complete a **coordinate graph** on graph paper to answer the questions.

1. Gina competes in the Three-Day Bike Challenge. Her school's principal will donate $20 for every 10 miles Gina bikes. Complete the ratio table for Gina's fundraising.

Miles Biked (*x*)	Money Raised (*y*)
0	0
10	

2. Draw a coordinate graph on graph paper.

3. What does the point (20, 40) on Gina's graph describe? _____

_____

4. How far does Gina need to ride before she makes $80? _____

_____

5. What is the relationship between the miles biked and the money raised?

_____

6. How much money will Gina raise for the full 150-mile ride? _____

How do you know? _____

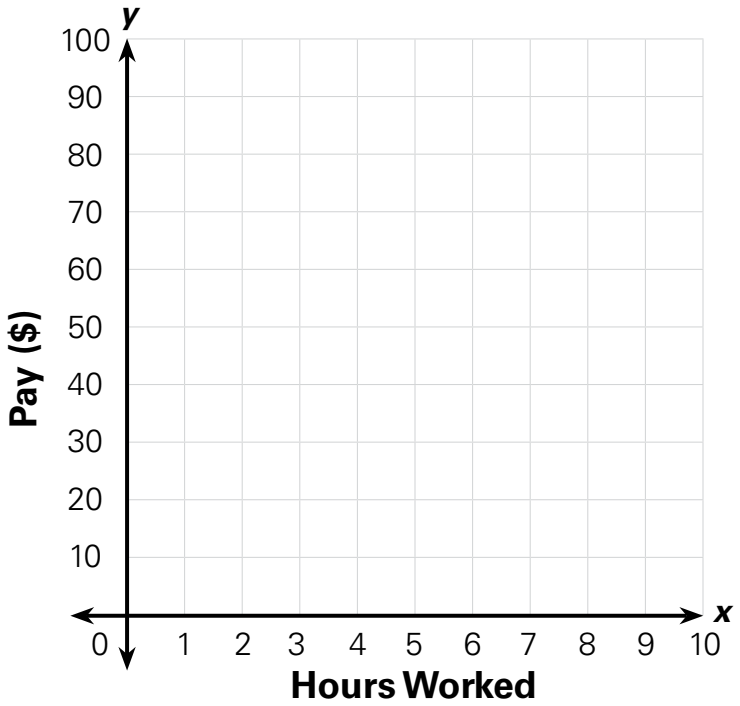
_____

_____

Extra Practice: Hourly Pay

Read the problem. Then plot the points on the graph and answer the questions.

1. Rae works at a pop-up store selling bags. She makes $15 each hour. Graph Rae's pay for working 1 to 5 hours.



2. What does the point (1, 15) represent? _____

3. How much money would Rae earn if she works for 4 hours? _____

4. One Saturday Rae worked for 6 hours.

a. What point on the graph would represent the money Rae earns for Saturday?

_____

b. How much money did Rae earn on Saturday? _____

5. What arithmetic rule describes Rae's earnings? _____

_____

_____

6. If Rae works 60 hours a month, how much money will she make in a month? _____

How do you know? _____

_____

Reading Ace

Trinity is another reading ace. Look at the books she has read. Use **base-10 blocks** to model the number of pages in each book. Then answer the questions.

Title	Number of Pages
Have You Seen My Toad?	20
The Great Gopher Chase	100
Jeffrey Jerbil: Rodent Detective	200
A History of Chocolate	2,000

1. If Trinity reads *The Great Gopher Chase* 4 times, how many pages does she read?

a. Write the number of pages in *The Great Gopher Chase* as a product of factors of ten.

_____

b. Write an equation that finds the total number of pages Trinity reads.

_____ Trinity reads _____ pages.

2. How many pages does each book have? Write an equation using factors of 10 and powers of 10.

Book	Factors of 10	Powers of 10
Have You Seen My Toad?		2 × _____ = _____
Jeffrey Jerbil: Rodent Detective		2 × _____ = _____
A History of Chocolate		2 × _____ = _____

a. How does the position of the digit 2 change in the numbers 20, 200, and 2,000?

_____

b. How does the value of 2 change in the numbers 20, 200, and 2,000?

_____

_____

Stacks of Books

Answer the questions. Use **base-10 blocks** to help you model the problems.

1. Alex works at a bookstore. He is making stacks of books by page count so he can help customers find books that are just the right length for them. Complete each equation.

Stack 1	Stack 2
5,000 = 5 ×	= 4 × 10
500 = 5 ×	= 4 × 10 × 10
50 = 5 ×	= 4 × 10 × 10 × 10

Stack 3	Stack 4
= 9 × 10	2,000 = 2 ×
= 9 × 10 × 10	200 = 2 ×
= 9 × 10 × 10 × 10	20 = 2 ×

2. Write each number as an expression using powers of ten.

Thousands	Hundreds	Tens	Ones
		7	0
	7	0	0
7	0	0	0

Expression

Thousands	Hundreds	Tens	Ones
		3	0
	3	0	0
3	0	0	0

Expression

3. Complete the sentences.

When you multiply a number by 10, you shift each digit ____ place to the _____.

When you multiply a number by 100, you shift each digit ____ places to the _____.

When you multiply a number by 1,000, you shift each digit ____ places to the _____.

Lesson 5 Exit Ticket

Part 1: Use **base-10 blocks** to model the problem. Then answer the questions.

1. Three people are packing books at a book warehouse. Each person puts 10 books in one box. Then, each person puts 10 boxes in one crate. Then, each person puts 10 crates on one warehouse shelf. How many books are in the warehouse?

Powers of 10 Expression	
3 boxes =	books
3 crates =	books
3 shelves =	books

There are _____ books in the warehouse.

2. Complete the equations.

$2 \times 10 \times 10 \times 10 =$ _____

$2 \times 10 =$ _____

$2 \times$ _____ $= 200$

Part 2: Think about patterns of zeros to help you complete the equations.

3. At the warehouse, Kira counts a book that has 7 pages in each copy. She counts ten boxes that each have ten copies of the book. What is the total number of pages in all these copies? Write an equation:

a. using factors of 10. _____

b. using powers of 10. _____

How do you know how many zeros will be in the product?

_____

_____

Extra Practice: Matching Powers of 10

Cut out a set of Matching Powers of 10 cards on pages 25–32. Shuffle the cards and lay them face down.

Play with a partner. On your turn, flip over three cards. Model the information on the cards with base-10 blocks. If the models match, keep the three cards and take another turn. If they don't match, turn the cards back over and let the other player have a turn.

Record the information on your matches below:

Powers of 10	Standard Form	Word Description

Powers of 10

1	2	3
4	5	6
7	8	9
10	10	10
10	10	10
10	10	10

Powers of 10

100	100	100
100	100	100
100	100	100
1,000	1,000	1,000
1,000	1,000	1,000
1,000	1,000	1,000

Matching Powers of 10

$5 \times 10 \times 10$	50	one hundred times 7
$7 \times 1{,}000$	500	ten times 6
5×10	5,000	one thousand times 6
6×100	60	ten times 7
$7 \times 10 \times 10$	600	one hundred times 50
6×10	6,000	ten times 50

Matching Powers of 10

$5 \times 10 \times 10 \times 10$	70	ten times 5
$6 \times 10 \times 10 \times 10$	700	ten times 700
7×10	7,000	one hundred times 6

Bats a Fact

1. Complete the table to show different ways to represent the numbers. Make a **place value drawing** on a place value mat to help.

Standard Form	Expanded Form with Exponents	Word Form (with Exponents)
40		4 times 10 to the first power
	4×10^2	4 times 10 to the second power
4,000	4×10^3	
40,000		4 times 10 to the fourth power
	4×10^5	
4,000,000		

2. Make **place value drawings** on a place value mat to model the expressions.

$3 \times 10 \times 10$ $6 \times 10 \times 10 \times 10 \times 10$

3. Find a pattern and use it to complete the equations.

$9 \times 10^1 = 90$

$9 \times 10^2 = 900$

$9 \times 10^3 =$ _____

$9 \times 10^4 =$ _____

$9 \times 10^5 =$ _____

Describe the pattern you used to solve: _____

_____

_____

Lakefront Baseball League

Review the example problem. Then use a **powers of 10 chart** to help you answer the questions.

Example

Gino orders **4** × 10^3 baseballs for the Lakefront Baseball summer league. How many baseballs is that?

Step 1

Identify the exponent.

The exponent is **3**.

Step 2

The exponent tells how many factors. Write a power of 10 expression.

The exponent is **3**, so the expression has **3** powers of 10:

4 × 10 × 10 × 10

Step 3

How many zeros will be in the product? The digit moves to the left once for each 10.

4 × 1<u>0</u> × 1<u>0</u> × 1<u>0</u>

The digit will move to the left **3** times. So, there will be **3** zeros in the product.

	Thousands	Hundreds	Tens	Ones
				4
× 10			4	0
× 10		4	0	0
× 10	4	0	0	0

Gino orders 4,000 baseballs.

1. Sara, a manager for the Lakefront Baseball league, makes the following orders. How many of each item does she order? Write your answer in standard form.

Batting gloves	7×10^2	Sara orders _____ batting gloves.
Mitts	7×10^3	Sara orders _____ mitts.
Helmets	7×10^4	Sara orders _____ helmets.
Baseballs	7×10^5	Sara orders _____ baseballs.

2. Victoria sells snacks during the baseball games. She sells 5×10^4 melon cups. Fill in the chart to show how many melon cups this is in standard form.

	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10					
× 10					
× 10					
× 10					

Lesson 6 Exit Ticket

1. Complete the table to show different ways to represent the numbers.

Number	Exponential Expression	Word Form (with Exponents)
	6×10^1	
800		
		2 times 10 to the fourth power
3,000		

2. Make a **place value drawing** on a place value mat to model the problem.

$4 \times 10 \times 10 \times 10$

3. Find a pattern and use it to complete the equations.

$7 \times 10^1 = 70$

$7 \times 10^2 =$ _____

$7 \times 10^3 =$ _____

$7 \times 10^4 =$ _____

$7 \times 10^5 =$ _____

What is the pattern? _____

_____

_____

Extra Practice: Jammin' in the Park

Read the problem. Then answer the questions.

Attendance for each concert in the Jammin' in the Park concert series is recorded below.

Concert	Attendance
Hip hop	8×10^3
Classical	7×10^2
Rock	9×10^1
R&B	6×10^4

1. Use a powers of 10 chart to show how many people attended each concert. Then write the total number in the table below.

Concert	Attendance (in standard form)
Hip hop	
Classical	
Rock	
R&B	

2. What expression shows how many people attended the R&B concert? Use factors of 10. _____

3. The attendance for the country music festival is 10 times as much as the R&B concert. What expression shows how many people attended the country music festival? Use factors of 10. _____

4. Write an exponential expression to represent the attendance for the country music festival. _____

5. How many people attended the country music festival? _____ people.

Place Value Mat (Millions)

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Place Value Mat (Millions)

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Place Value Mat (Millions)

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Place Value Mat (Millions)

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Powers of 10 Charts

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

Powers of 10 Charts

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

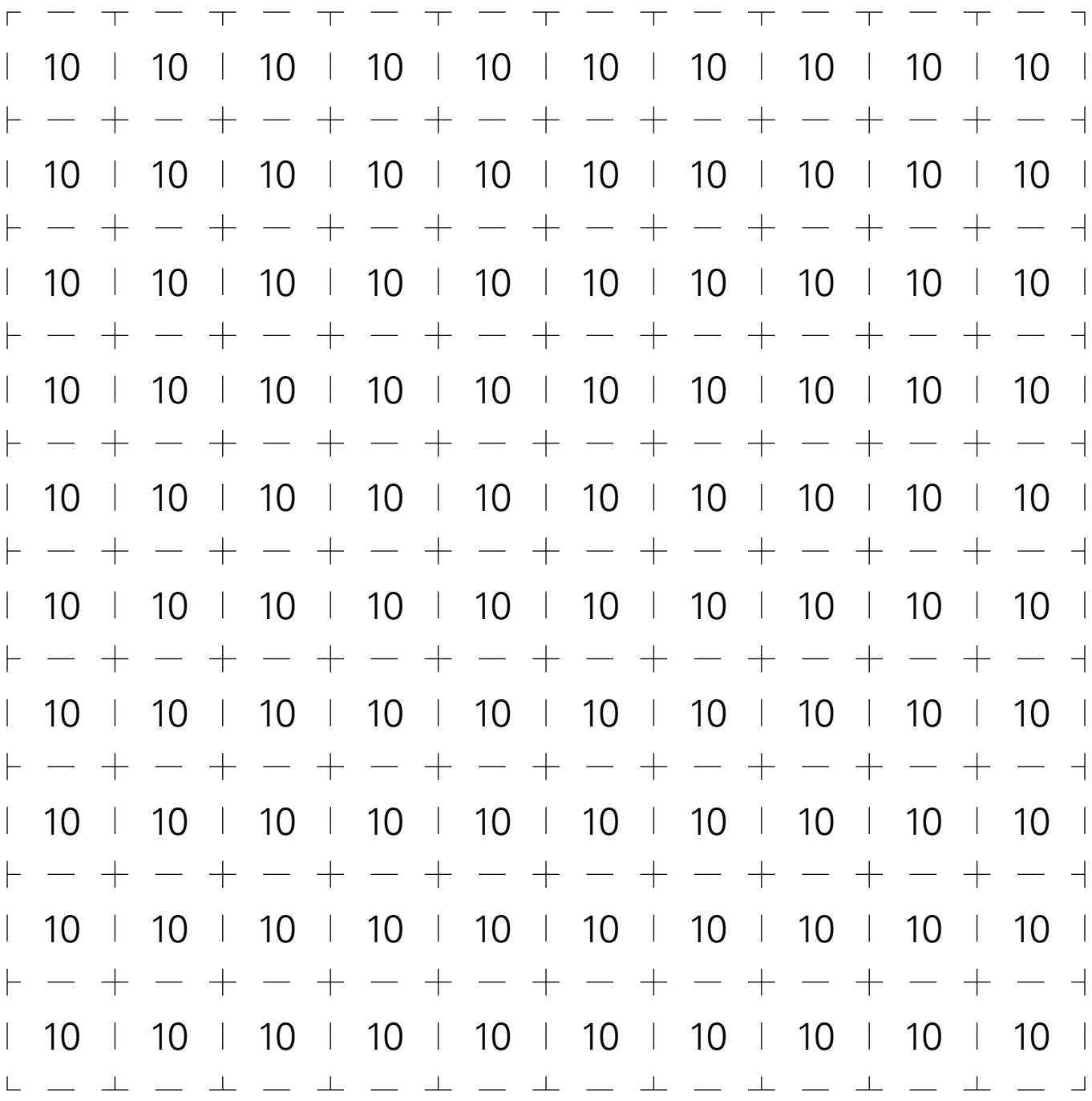
	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

Powers of 10 Charts

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
× 10							
× 10							
× 10							
× 10							
× 10							
× 10							

Grid of Tens



Exponent Cards

10^1	10^1	10^1	10^1	10^1	10^1
10^2	10^2	10^2	10^2	10^2	10^2
10^3	10^3	10^3	10^3	10^3	10^3
10^4	10^4	10^4	10^4	10^4	10^4
10^5	10^5	10^5	10^5	10^5	10^5
10^6	10^6	10^6	10^6	10^6	10^6

Assessment

Unit 1 Assessment

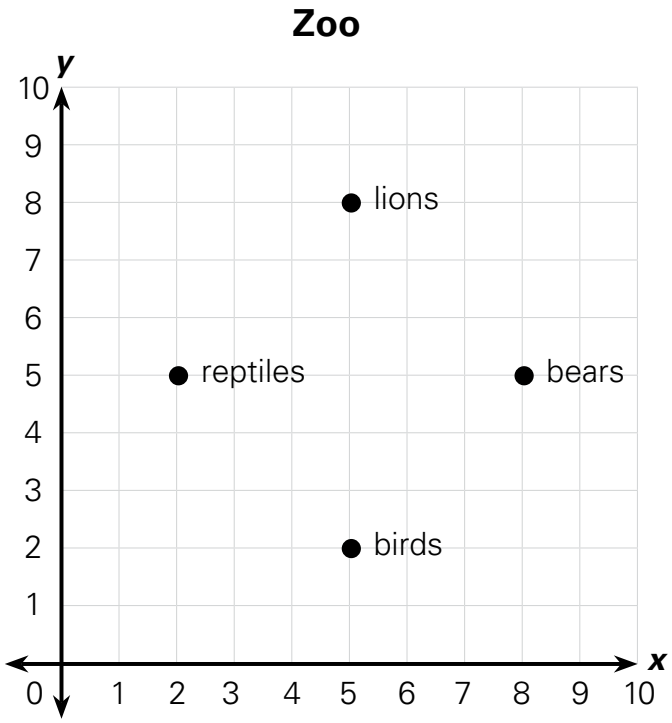
Kai paints rocks to decorate a garden. He paints 5 rocks each minute for 5 minutes. Use this information to answer questions 1 and 2.

1. Draw a number line to show the number of rocks Kai has painted by the end of each minute.

2. Complete the table to show the number of rocks Kai has painted by the end of each minute.

Time (Minutes)	Number of Rocks Painted

Use the map of the zoo to answer questions 3 and 4.



3. Which animals are located at the points below?

Point	Animal
(5, 2)	
(8, 5)	

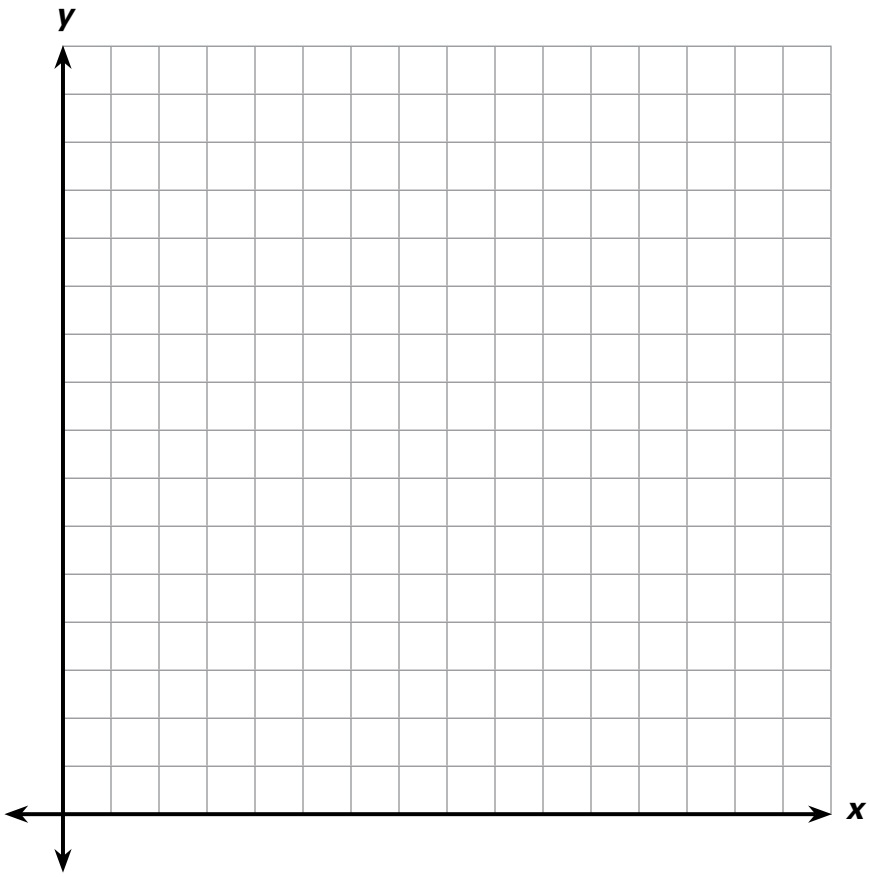
4. Write the ordered pair for the location of the lions. _____

Peter sells flowers for $4 a bunch. On Saturday, he sells 4 bunches. Use this information to answer questions 5 and 6.

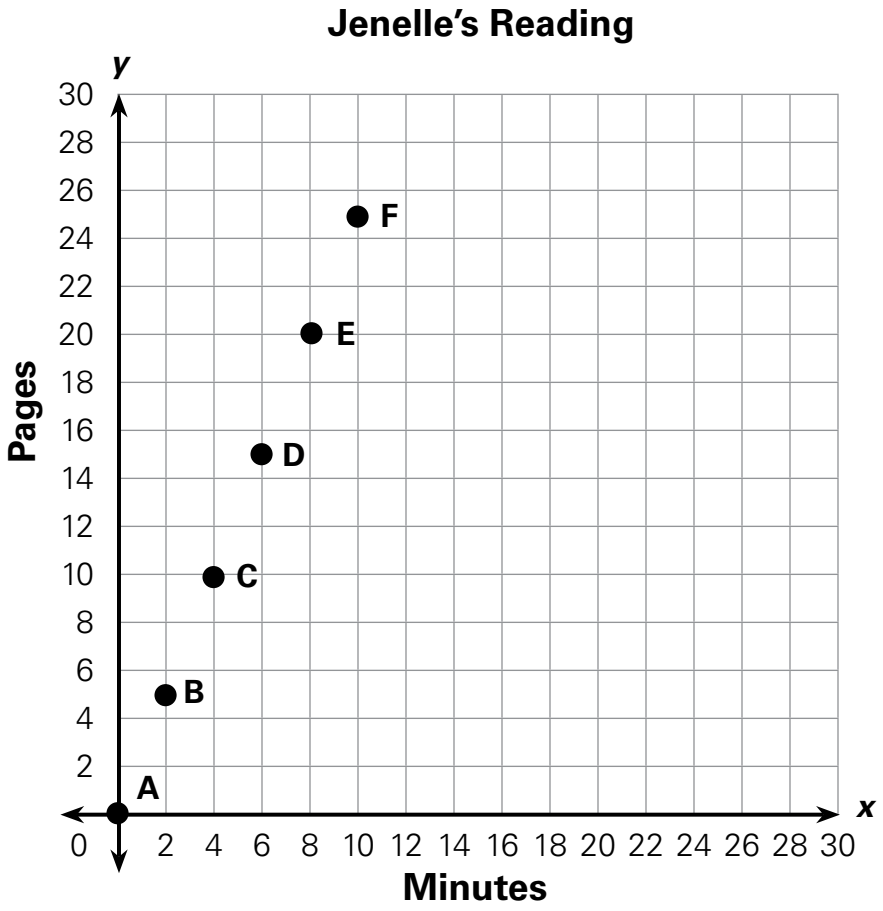
5. Complete the table to show how much money Peter makes after selling each bunch of flowers on Saturday. Then write the ordered pairs that describe where the information would appear on a coordinate plane.

Number of Bunches	Money Earned (Dollars)	Ordered Pair

6. Graph the points to show the relationship between the number of bunches of flowers and the amount of money Peter earned. Include a title, labels, and numbered axes.



The coordinate plane shows how many pages Jenelle reads every 2 minutes. Use the coordinate plane below to answer questions 7 and 8.



7. Complete the table. Then identify the arithmetic rule for each coordinate.

Point	Number of Minutes (*x*)	Number of Pages (*y*)
A		
B		
C		
D		
E		
F		

Arithmetic rule for *x*-coordinates: _____

Arithmetic rule for *y*-coordinates: _____

8. How long will it take Jenelle to read 100 pages? Explain how you know.

It will take Jenelle _____ minutes to read 100 pages. I know this because _____

_____

_____

9. Find the products.

$10 \times 7 =$ _____

$10 \times 10 \times 7 =$ _____

$10 \times 10 \times 10 \times 7 =$ _____

$10 \times 10 \times 10 \times 10 \times 7 =$ _____

What pattern do you notice? _____

_____

10. Complete the table to show different ways to represent the numbers.

Standard Form	Expanded Form with Exponents
60	
	6×10^3
	6×10^5
6,000,000	

Unit 1 Cumulative Review

1. Complete the tape diagram. Then solve the problem.

Ali played 4 songs on his guitar. Sasha played 3 times as many songs on her guitar. How many songs did Sasha play?

Ali

Sasha

Sasha played _____ songs.

2. Ted painted his bedroom in different colors. He painted $1\frac{4}{6}$ walls blue and $1\frac{3}{6}$ walls yellow. How much of his room has Ted painted?

Ted painted _____ of his bedroom walls.

3. Patsy and Jan each had a sandwich. Patsy ate $\frac{2}{3}$ of her sandwich. Jan ate $\frac{4}{8}$ of her sandwich. Who ate more of her sandwich?

_____ ate more of her sandwich.

4. Jake has 2 hours at the mall before his dad picks him up. He spends 20 minutes looking for a gift and 45 minutes shopping for sneakers. He also spends 15 minutes talking with friends. How much time does Jake have left to eat at the mall's food court?

Write an equation to model the problem. Use the variable *t* to show how much time Jake has left.

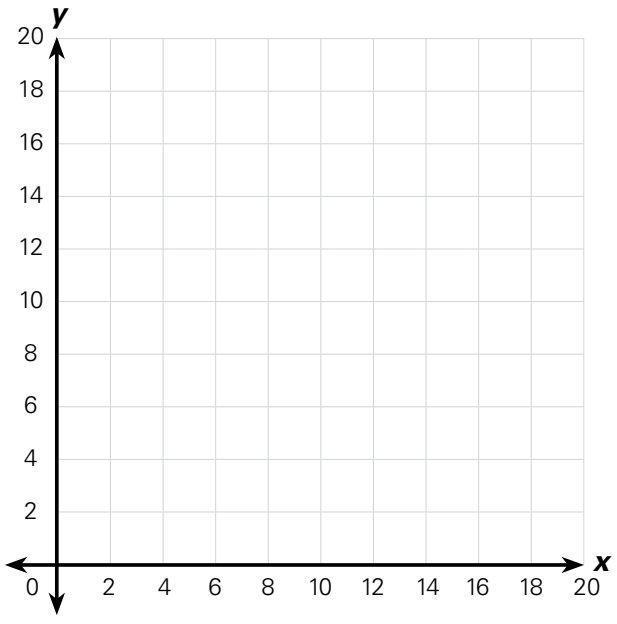
_____

t = _____

Jake has _____ minutes left.

5. Use arithmetic rules to complete the ratio table. Then plot the points on the coordinate plane.

***x*-coordinate**	***y*-coordinate**	**Ordered Pair**
0	0	(0, 0)
3	5	(3, 5)



6. Use the tape diagrams to multiply $\frac{1}{4} \times 3$.

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

7. Complete the equations.

$8 \times 10 =$ _____

$8 \times 100 =$ _____

$8 \times 1{,}000 =$ _____

8. Write a decimal that is equal to $\frac{7}{10}$.

$\frac{7}{10} =$ _____

9. Multiply.

$$\begin{array}{r} 2753 \\ \times \quad 5 \\ \hline \end{array}$$

10. List all the factors for 27.

_____

Is 27 a prime or composite number? _____

11. Solve 22 ÷ 4.

_____ R _____

12. Use the distributive property to multiply 36 × 93. Use an area model to break apart the factors.

×

_____ + _____ + _____ + _____ = _____

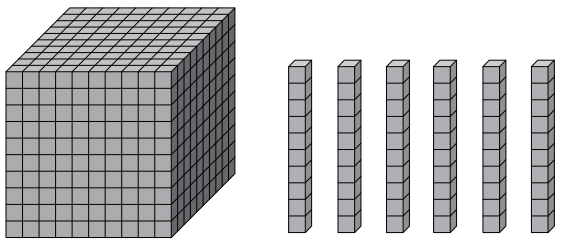
13. Find an equivalent fraction.

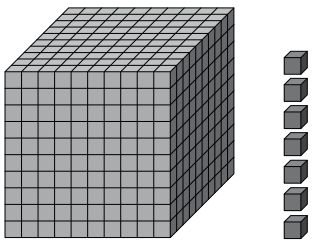
$\frac{7}{8}$ = _____

14. Add.

$$\begin{array}{r} 12{,}561 \\ +\ \ 7{,}735 \\ \hline \end{array}$$

15. Write the numbers. Which number is greater?





_____ _____

_____ > _____

Unit 2:

Decimals

Catapult Learning™

Garden Size

Use **place value disks** and a place value chart to multiply or divide. Then answer the questions.

1. Djivan makes a tomato garden in his backyard. The length of Djivan's tomato garden is 82 centimeters. Divide by 100 to write the length in meters.

Hundreds	Tens	Ones	.	Tenths	Hundredths
	8	2	.	0	0

82 ÷ 100 = _____ meters = _____ tenths and _____ hundredths.

What is the value of the digit 2 in the number of centimeters? _____

What is the value of the digit 2 in the number of meters? _____

2. Larissa has a flower garden that is 2.92 meters long. Multiply by 100 to write the length in centimeters.

Hundreds	Tens	Ones	.	Tenths	Hundredths
		2	.	9	2

There are _____ tenths and _____ hundredths in 2.92.

2.92 × 100 = _____ centimeters

What is the value of the digit 9 in the number of centimeters? _____

What is the value of the digit 9 in the number of meters? _____

Power-ful Multiplication

Review the example problem. Then use the place value charts to multiply and divide.

Example

Djivan's garden hose is **5.01** meters long. Multiply by **100** to find the length of the hose in centimeters.

Step 1

Write the number in a place value chart.

H	T	O	.	Tths	Hths
		5	**.**	**0**	**1**

Note how many times you need to muliply by 10:
100 = 10 × 10

Step 2

Shift each digit one place to the left each time you multiply by 10.

H	T	O	.	Tths	Hths	
		5	**.**	**0**	**1**	×10
	5	**0**	**.**	**1**		×10
5	**0**	**1**				

5.01 meters × **100** = 501 centimeters

Step 3

Note how the value of the digits changed.

When converting meters to centimeters, the digit 5 = 5

After multiplying by 10, the digit 5 = 50

After multiplying by 100, the digit 5 = 500

Step 4

To divide by 100, shift each digit one place to the right each time you divide by 10.

H	T	O	.	Tths	Hths	
5	**0**	**1**	**.**			÷10
	5	**0**	**.**	**0**		÷10
		5	**.**	**0**	**1**	

501 centimeters ÷ 100 = **5.01** meters

1. 0.62 × 1,000 = _____ In 0.62, the digit 6 has a value of _____.

After multiplying 0.62 by 10 once, how does the value of the digit 6 change?

_____

2. 287 ÷ 100 = _____ In 287, the digit 7 has a value of _____.

After dividing 287 by 10 once, how does the value of the digit 7 change?

_____

3. 0.04 × 1,000 = _____ In 0.04 the digit 4 has a value of _____.

After multiplying 0.04 by 10 once, how does the value of the digit 4 change?

_____

Lesson 8 Exit Ticket

Use **place value disks** or a place value chart to multiply or divide. Then answer the questions.

1. 64 ÷ 100 = _____

Hundreds	Tens	Ones	.	Tenths	Hundredths

In 64, the digit 4 has a value of _____.

After dividing by 64 by 10 once, how does the value of the digit 4 change?

_____

How many tenths in the quotient? _____

How many hundredths in the quotient? _____

2. 0.3 × 1,000 = _____

Hundreds	Tens	Ones	.	Tenths	Hundredths

In 0.3, the digit 3 has a value of _____.

After multiplying 0.3 by 10 once, how does the value of the digit 3 change?

_____

How many tenths in 0.3? _____

How many hundredths in 0.3? _____

Extra Practice: Photo Mural

Part 1: Write whether the statements are *true* or *false*.

1. When you multiply a decimal number by 10, the digits move one place to the left in a place value chart. _____

2. A digit in the ones place has a value 10 times more than the same digit in the tenths place. _____

3. When you divide a number by a power of 10, you end up with a bigger number. _____

4. You can only use place value disks to model division, not multiplication by a power of 10. _____

Part 2: Use **place value disks** and chart to multiply and divide numbers by powers of 10 and answer questions.

5. Zoe paints a mural that is 753 inches long. She takes a photo of the finished mural. The photo is 100 times smaller than the mural. What is the length of the photo?

Hundreds	Tens	Ones	.	Tenths	Hundredths
7	5	3	.	0	0

The length of Zoe's photo is _____ inches.

6. Circle the decimals with an even number in the tenths place. Draw a box around the decimals with an even number in the hundredths place. Numbers may have both.

1,588.63 975.14 7.92 327.25 4,637.62

0.46 26.82 0.27 6.54

Place Value Charts

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Place Value Charts

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Hundreds	Tens	Ones	.	Tenths	Hundredths
			.		
			.		
			.		
			.		

Ice Is Nice

Part 1: Answer the questions to model decimal money amounts. Use **base-10 blocks** and 10 × 10 grids.

Smooth Sliding Ice Rink is running a special for two people to skate for $4.85. Regina and Nisay want to go skating. They have saved up all their pennies, but they're not sure how many pennies equal $4.85.

1. How many whole dollars are in $4.85? _____

2. Model the whole dollars using base-10 blocks. How many cents do your base-10 blocks represent? _____

3. Model 0.85 using base-10 blocks. How many pennies equal $4.85? _____

4. Model $4.85 using 10 × 10 grids.

Part 2: Model the dollar amounts with base-10 blocks.

$2.09 $1.77 $6.36 $2.31

Part 3: Say how many dollars, cents, ones, and hundredths are in the number.

$4.51	dollars	cents
$2.97	dollars	cents
$8.05	dollars	cents

4.51	ones	hundredths
2.97	ones	hundredths
8.05	ones	hundredths

Part 4: Write the amounts in decimal form.

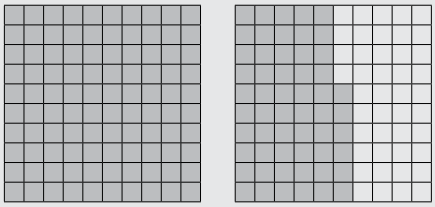
Amount	Decimal Form
1 and 78 hundredths	
5 and 3 hundredths	

Money Grids

Review the example problem. Use **10 × 10 grids** to answer the questions.

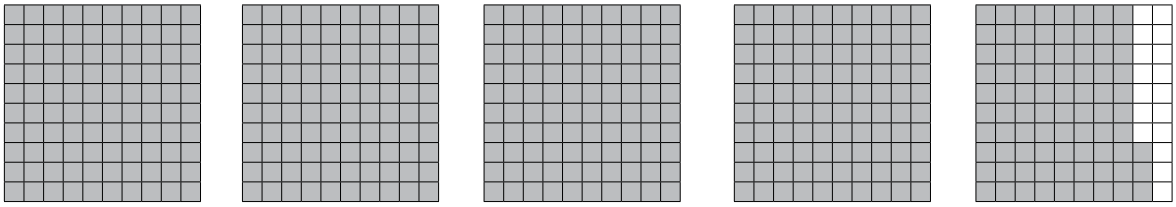
Example

How much money does the model represent?

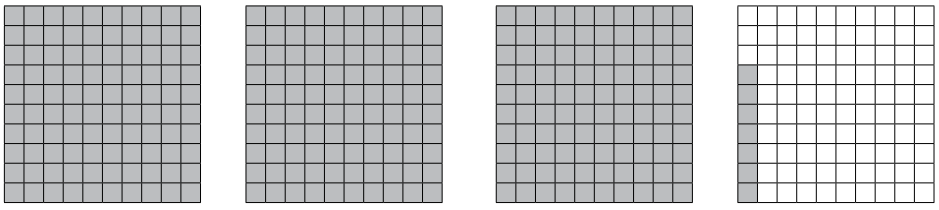


Step 1	Step 2	Step 3
Count the number of fully shaded grids. These each represent 1 dollar, or 100 cents. 1 fully shaded grid = 1 dollar	Count squares shaded in the other grids. Each full row or column represents 10 cents. Each square represents 1 cent. 56 squares shaded = 56 cents	Write money as a decimal, with the whole dollars to the left of the decimal point and the cents to the right. 1 dollar and 56 cents = $1.56

1. In decimal form, the amount of money modeled in the grids is _____ .



2. In decimal form, the amount of money modeled in the grids is _____ .



3. Model the dollar amounts below with 10 × 10 grids.

$0.89 $1.25 $4.59

Lesson 9 Exit Ticket

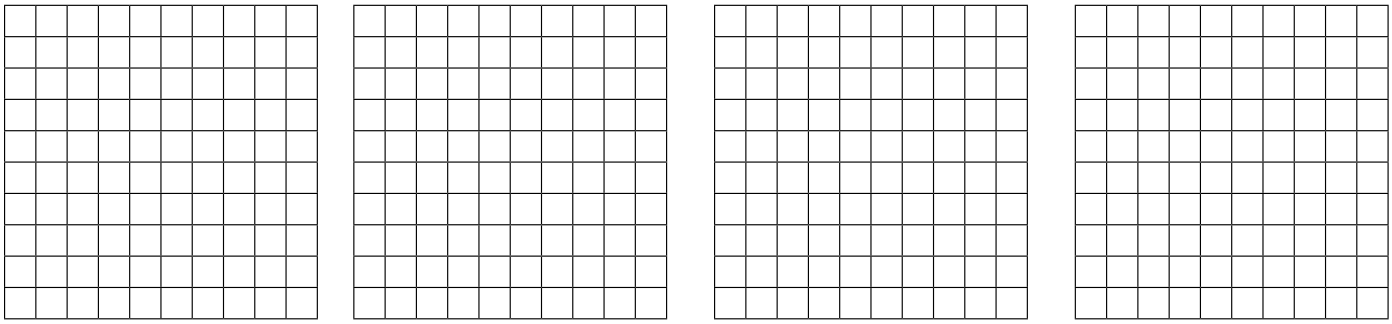
Part 1: Use **base-10 blocks** to model the decimal money amount.

1. $1.75

2. $2.09

Part 2: Shade the 10 × 10 grids to model the given amount.

3. $3.34



Part 3: Answer the questions about money and decimals.

4. How many whole dollars and leftover cents are in $8.91?

Dollars: _____ Cents: _____

5. How many ones and leftover hundredths are in 8.91?

Ones: _____ Hundredths: _____

6. What is 6 and 50 hundredths in decimal form? _____

7. What is 7 dollars and 6 cents in decimal form? _____

Extra Practice: Decimal Dollars and Cents

Part 1: Write whether the statements are *true* or *false*.

1. A dollar is 1/100 of a cent. _____

2. An entirely shaded 10 × 10 grid represents 1 dollar. _____

3. The whole dollar parts are written to the left of the decimal point. _____

4. In a base-10 block model, 4 cents is represented by 4 tens rods. _____

5. There are 100 cents in 1 dollar. _____

Part 2: Use **base-10 blocks** and 10 × 10 grids to model decimal money amounts, identify the amount of money represented by a given model, and answer questions.

6. Isaiah wants to find out how many pennies equal $3.09.

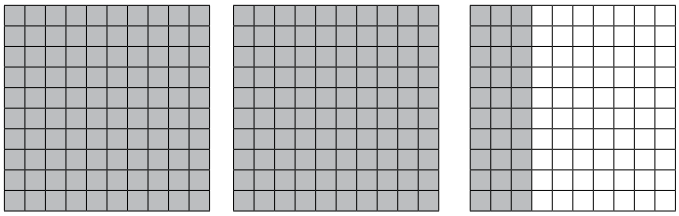
a. How many whole dollars are in $3.09? _____

b. How many cents are in $3.09? _____

c. Model $3.09 using base-10 blocks.

d. There are _____ pennies in $3.09.

7. What amount of money do the 10 × 10 grids below represent? _____



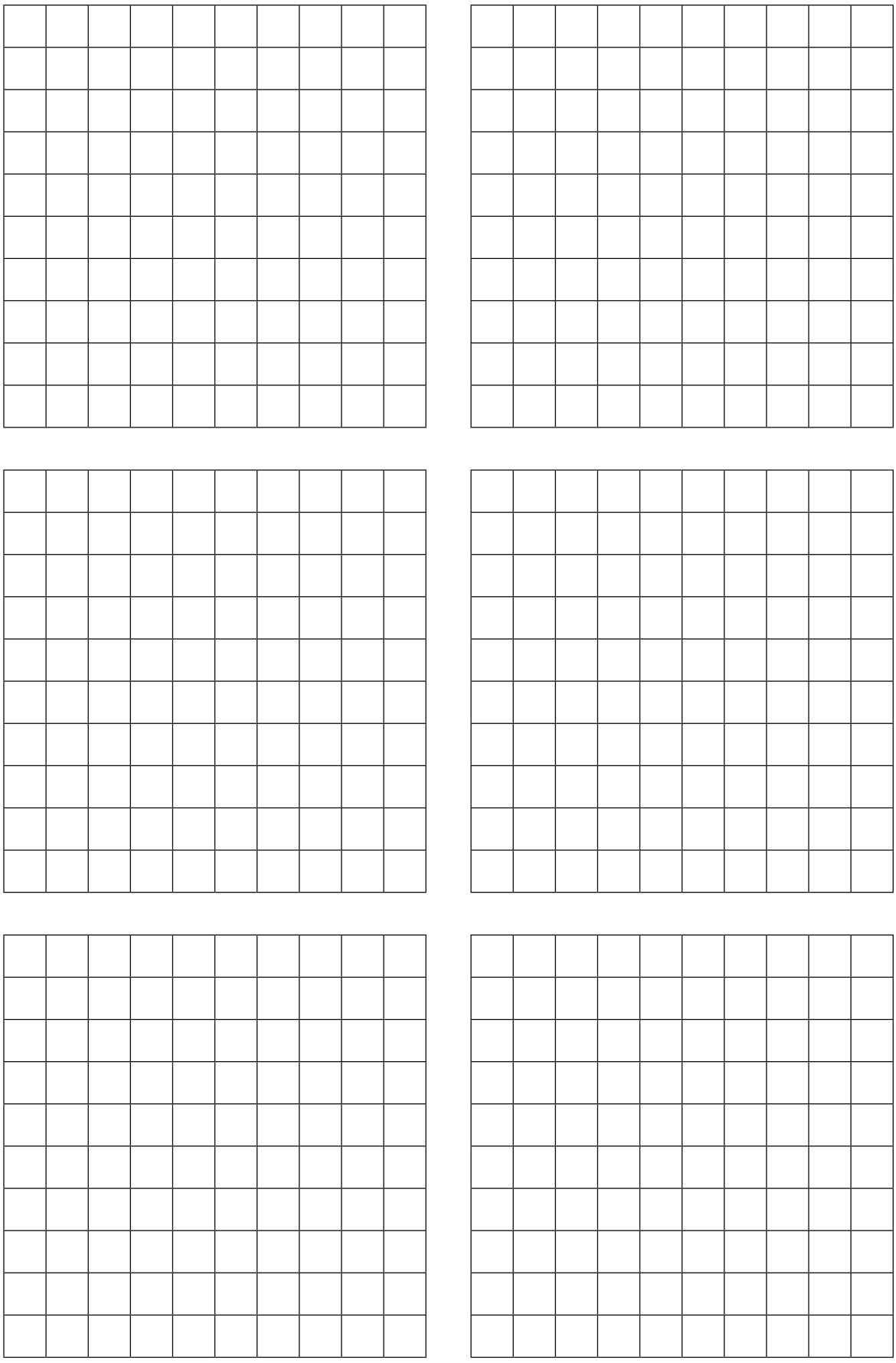
8. Geniah receives $2.47 in change when she buys a slice of pizza.

a. How many whole dollars are in $2.47 _____

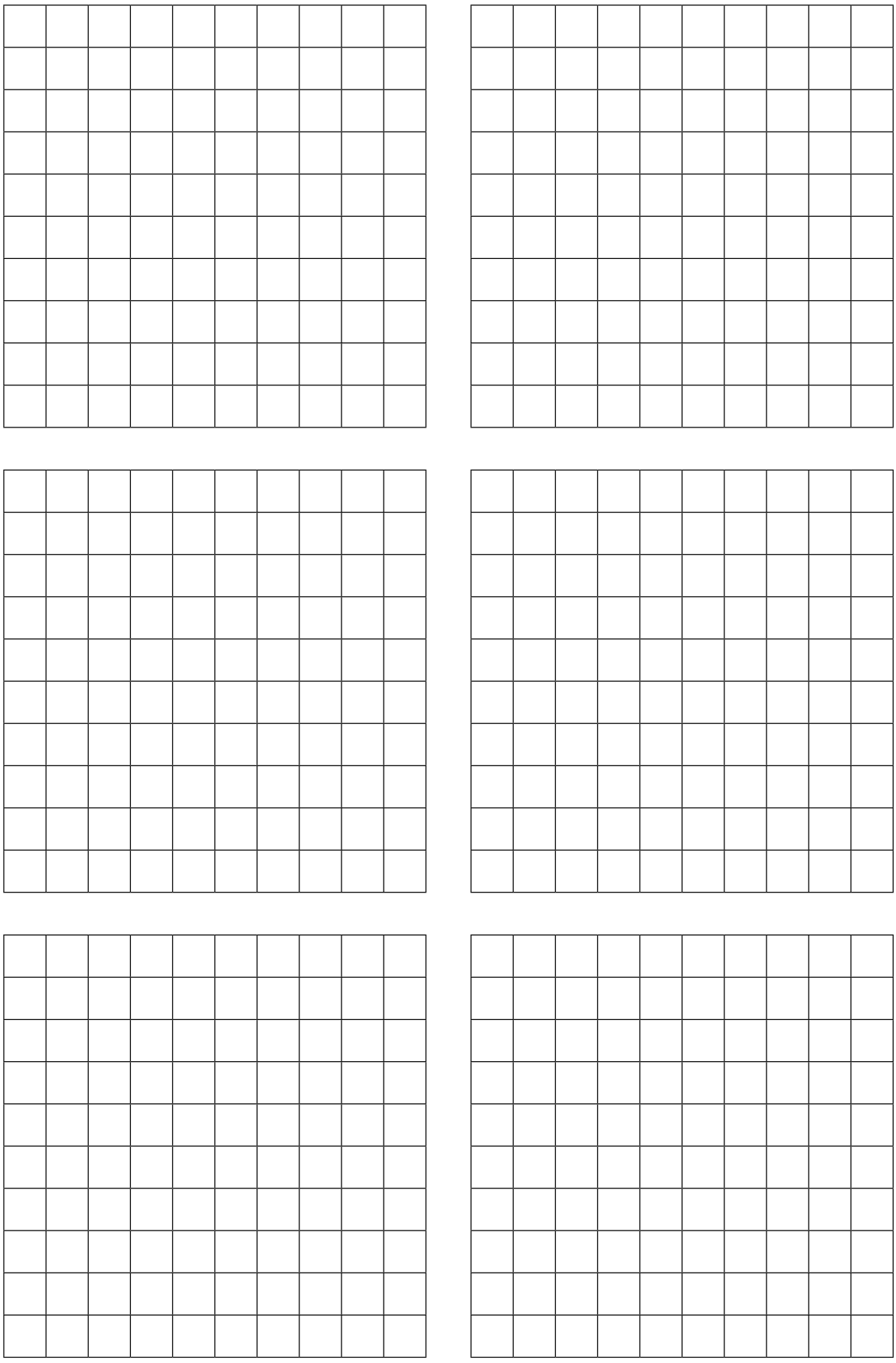
b. How many cents are in $2.47? _____

c. There are _____ pennies in $2.47.

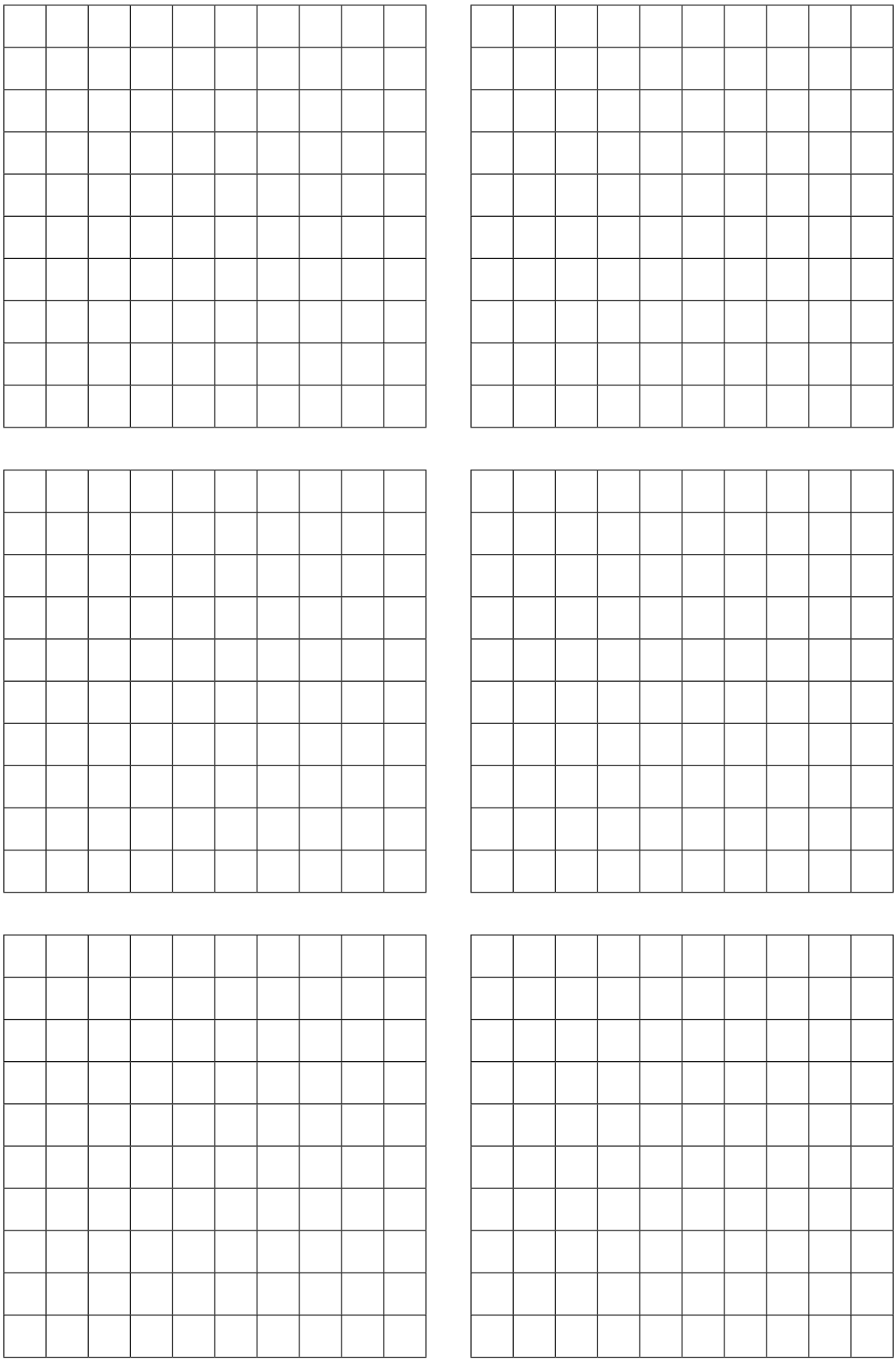
10 × 10 Grid



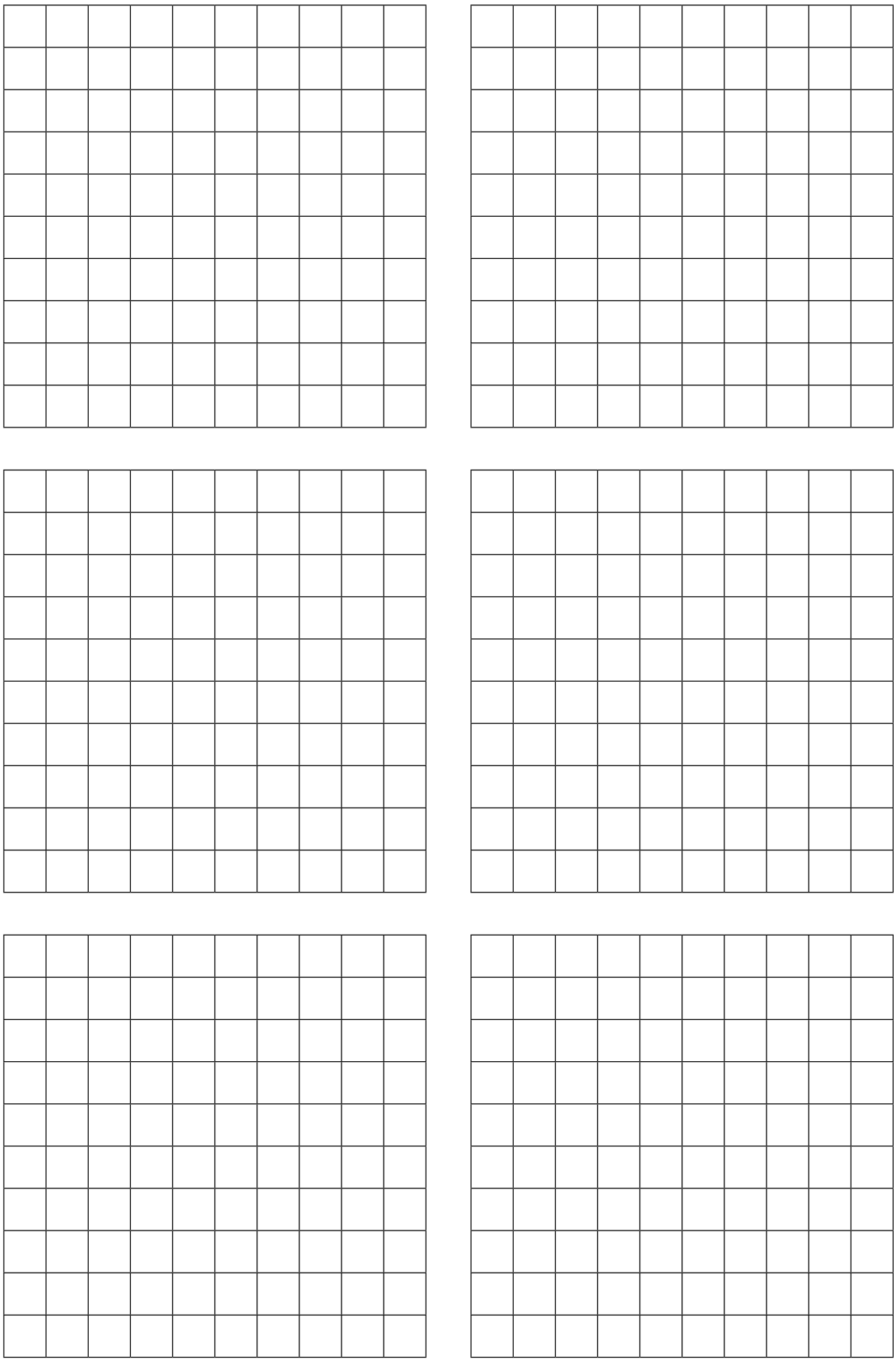
10 × 10 Grid



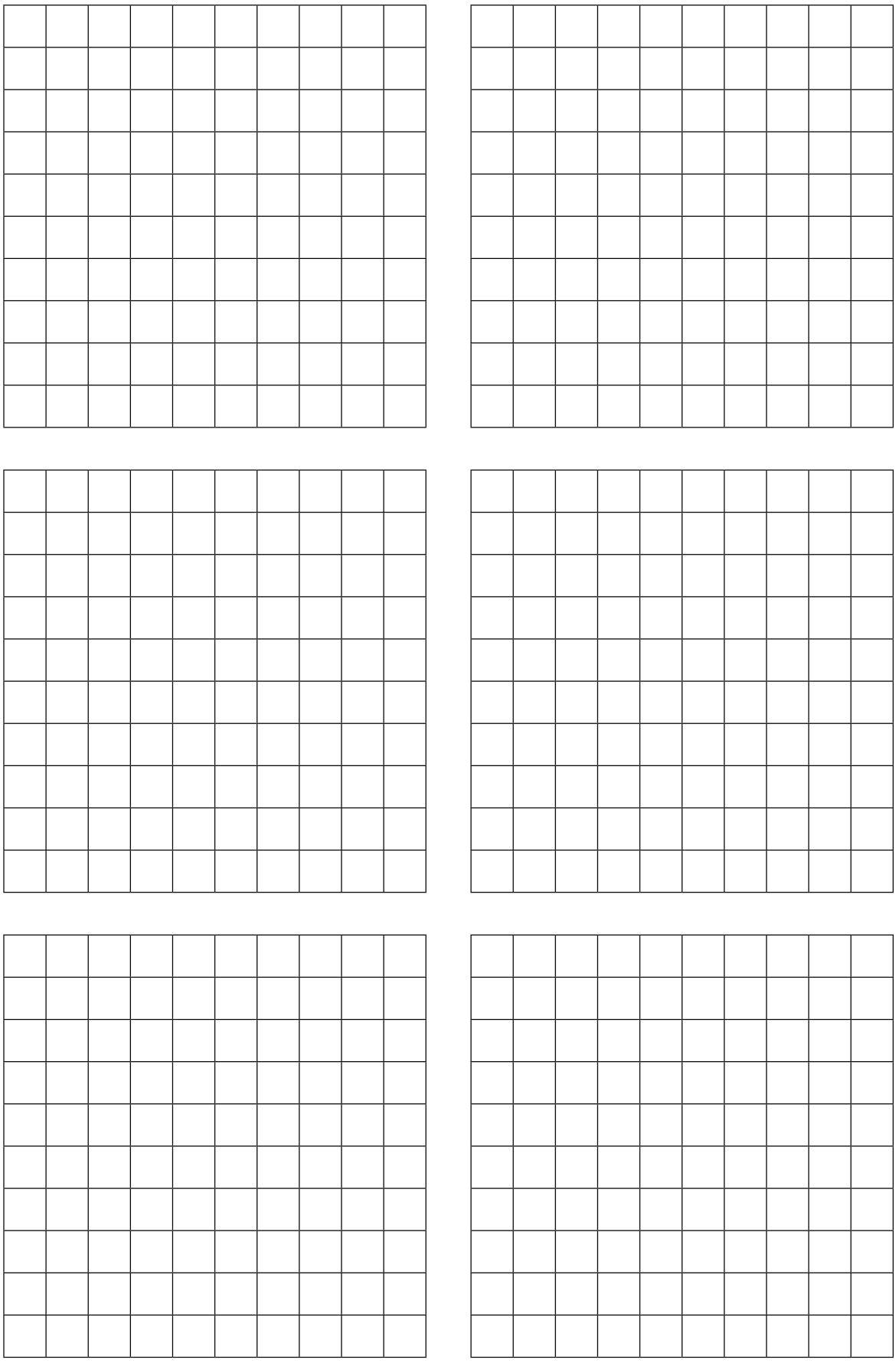
10 × 10 Grid



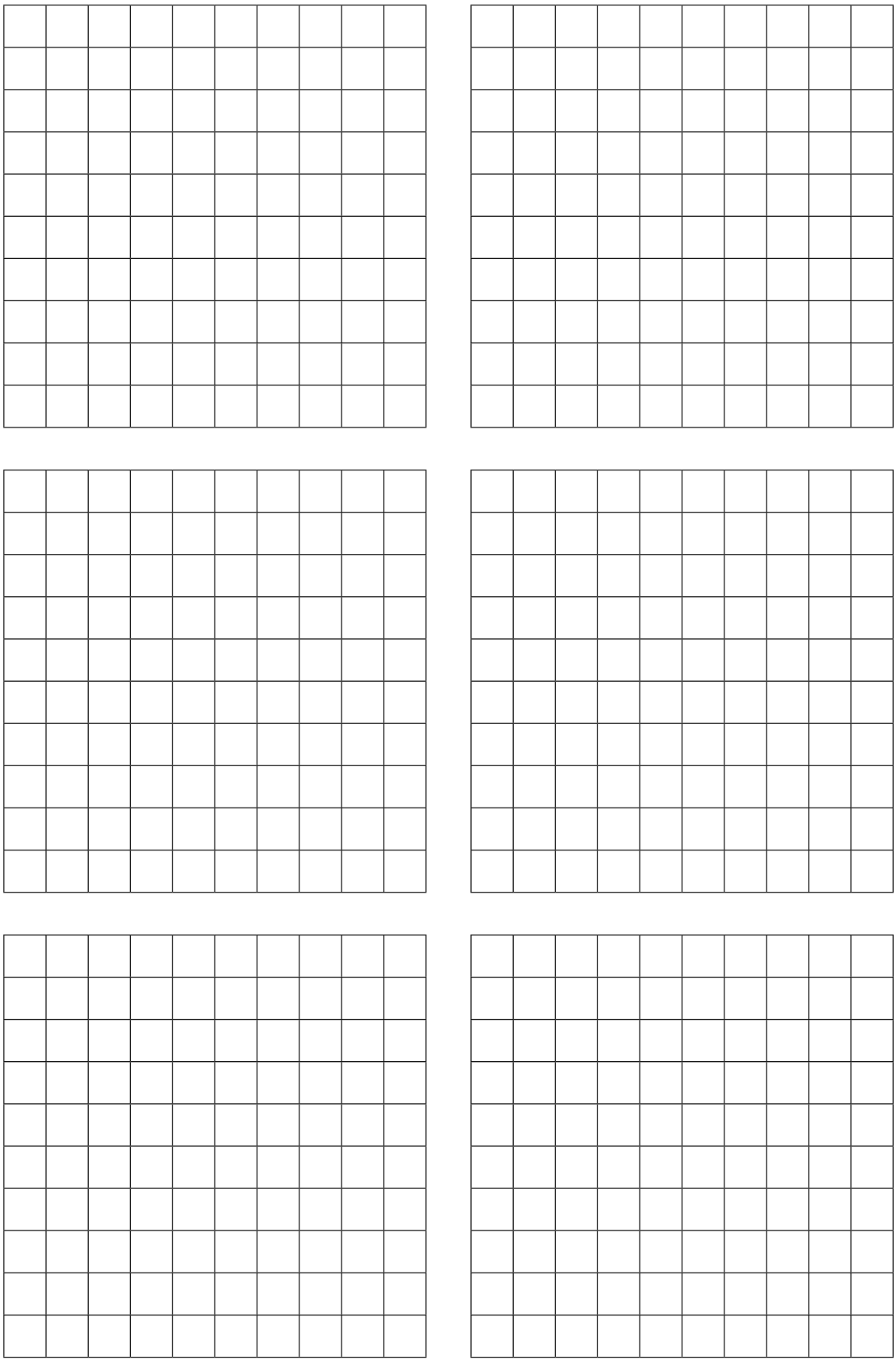
10 × 10 Grid



10 × 10 Grid



10 × 10 Grid



No Rotten Apples

Use **place value disks** to model decimals, write decimals as fractions, and answer questions.

To make a batch of apple cider, the volunteers will need 14.375 pounds of apples. We want to know what this amount is as a fraction.

1. Write the pounds of apples in the place value chart.

Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths

2. Model 14.375 using place value disks.

3. What would the denominator be if you made a fraction with the part of 14.375 after the decimal point? _____

4. Write 14.375 as a mixed number. _____

5. How would you write 14.375 using words?

_____

Use **place value disks** to model the following decimals. Then read the numbers aloud.

6. 12.251

7. 7.890

8. 3.416

Decimals to Fractions

Review the example problem. Write the decimal in a **place value chart** to help you read it and write it as a mixed number. You can use **place value disks** to help.

Example

Read **2.347** and write it as a mixed number.

Step 1

Write **2.347** in a place value chart. Make sure the digits are in the correct column.

Ones	.	Tenths	Hundredths	Thousandths
2	**.**	**3**	**4**	**7**

Step 2

Group the values to the left and right of the decimal point and use the place value of the farthest right place to read the number.

2.347 = two and three hundred forty-seven thousandths

Step 3

To find the fractional part of the mixed number, use the farthest right place value as the denominator and the values to the right of the decimal point as the numerator. Combine with the value of all numbers to the left of the decimal point.

$\frac{\mathbf{347}}{1{,}000}$

2.347 = $2\ \frac{\mathbf{347}}{1{,}000}$

5.921	**504.42**
Word form: _____ _____ Mixed Number: _____	Word form: _____ _____ Mixed Number: _____
2.055	**19.352**
Word form: _____ _____ Mixed Number: _____	Word form: _____ _____ Mixed Number: _____

Lesson 10 Exit Ticket

Part 1: Read the problem. Use **place value disks** to model decimals, write decimals as fractions, and answer questions.

Helena weighed her dog, Freckles, on a scale. Freckles weighed 36.824 pounds. Helena wants to know how much Freckles weighed as a fraction.

1. Model 36.824 using place value disks.

2. What is 36.824 as a mixed number with a fraction? _____

Part 2: Match the numbers decimals to their correct readings.

3.

4.612	Four and sixty-two hundredths
4.621	Four and six hundred twelve thousandths
4.62	Four and twelve hundredths
4.061	Four and sixty-one thousandths
4.12	Four and six hundred twenty-one thousandths

Part 3: Write each decimal as a mixed number with a fraction.

4. 28.536 _____

5. 7.412 _____

6. 16.83 _____

Extra Practice: Quilt Fabric

Part 1: Write the following decimals in word form.

1. 0.756 _____

2. 6.219 _____

3. 1.67 _____

Part 2: Use place value disks to model decimals, write decimals as fractions, and answer questions.

4. Deena needs 2.875 yards of several different fabrics to make her quilt.

a. Model 2.875 using place value disks.

b. What are the numerator and denominator for the fraction part of this decimal?

Numerator: _____ Denominator: _____

c. What is 2.875 written as a mixed number with a fraction? _____

Part 3: Write each decimal as a mixed number with a fraction.

5. 59.62 _____

6. 84.735 _____

7. 3.916 _____

8. 4.58 _____

9. 25.169 _____

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Shake It Up

Part 1: Use a place value chart and **place value disks** to model decimals, write decimals in expanded form, and answer questions.

Hideki is doing his report on rattlesnakes. He saw a huge rattlesnake at the zoo named Shakes. According to the sign by the cage, Shakes was 236.91 centimeters long. Hideki wants to write Shakes' length in expanded form.

1. Write Shakes' length in the place value chart.

Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths

2. Write 236.91 in words. _____

_____

3. Write the expressions used for writing 236.91 in expanded form.

4. Write Shakes' length in expanded form.

_____

Part 2: Model the decimals with **place value disks** and write them in expanded form.

Decimal	Expanded Form
854.909	
83.665	
6,503.53	

Expanded Decimals

Review the example problem. Write the decimals in expanded form. Use a **place value chart** to help.

Example

Write **84.396** in expanded form.

Step 1

Write **84.396** in a place value chart.

Tens	Ones	.	Tenths	Hundredths	Thousandths
8	**4**	**.**	**3**	**9**	**6**

Step 2

Multiply each digit in **84.396** by the value of a unit in that place value.

$\mathbf{8} \times 10 \quad \mathbf{4} \times 1 \quad \mathbf{3} \times \frac{1}{10} \quad \mathbf{9} \times \frac{1}{100} \quad \mathbf{6} \times \frac{1}{1{,}000}$

Step 3

Write the expanded form as the sum of partial products.

$\mathbf{84.396} = (\mathbf{8} \times 10) + (\mathbf{4} \times 1) + (\mathbf{3} \times \frac{1}{10}) + (\mathbf{9} \times \frac{1}{100}) + (\mathbf{6} \times \frac{1}{1{,}000})$

1. 26.754 _____

2. 25.42 _____

3. 29.182 _____

4. 40.169 _____

5. 98.946 _____

6. 70.631 _____

7. 21.21 _____

Lesson 11 Exit Ticket

Part 1: Use **place value disks** to model each number.

1. 748.329

2. 76.514

3. 1.003

4. 2.19

Part 2: Write each number in expanded form.

5. 39.57 _____

6. 529.368 _____

7. 41.256 _____

8. 94.372 _____

Extra Practice: A Close Race

Part 1: Use a place value chart and **place value disks** to model decimals and write decimals in expanded form.

Sigal's brother Zev once had a running race that he won by 23.64 centimeters.

1. Write the distance in the place value chart.

Tens	Ones	.	Tenths	Hundredths	Thousandths

2. Model 23.64 using place value disks.

3. What is the expanded form of 23.64?

_____

Part 2: Write each number in expanded form.

4. 192.85 _____

5. 629.413 _____

6. 84.259 _____

7. 31.428 _____

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Decimal Place Value Charts (Thousandths)

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			
			.			

Running Races

Part 1: Use **place value disks** to compare decimal numbers, write comparison number sentences, and answer questions.

The table shows race times for students who participated in the 50-yard dash.

Student	Race Time (seconds)
Abby	7.72
Jesse	8.194
Ricky	7.7
Lauren	8.483

1. Model Lauren's and Jesse's race times using place value disks on a place value mat.

2. In which place do you begin comparing place value disks?

3. Explain how to compare Lauren's and Jesse's times using the disks.

4. Which race time is greater (slower)? Write a comparison number sentence.

_____

Part 2: Compare numbers digit by digit. You may use a place value chart to help.

5. Write a comparison number sentence for Abby's and Ricky's race times.

_____

6. Write a comparison number sentence for Ricky and Jesse's race times.

_____

Comparison Practice

Review the example problem. Use digit comparison to compare decimal numbers. Then write a greater than or less than symbol to complete the comparison number sentence.

Example

Compare digits in **13.45** and **13.62** to determine which number is greater.

Step 1

Write both numbers in a place value chart with numbers aligned at the decimal point or write the numbers on top of each other. Be sure to line them up with the decimal.

Tens	Ones	.	Tenths	Hundredths
1	3	.	4	5
1	3		6	2

Step 2

Begin comparing digits on the left and move to the right until the digits in the same place are different.

- Tens place: both digits are 1
- Ones place: both digits are 3
- Tenths place: digits are 4 and 6

Step 3

Use the digit that is greater to indicate the number that is greater.

Since 6 is greater than 4, **13.62** is greater than **13.45.**

Step 4

Write a comparison sentence using the greater than or less than symbol.

13.62 > 13.45

1. 81.627 ◯ 83.456

			.			
			.			

2. 674.56 ◯ 67.56

			.			
			.			

3. 29.039 ◯ 29.46

			.			
			.			

4. 43.29 ◯ 43.293

			.			
			.			

5. 79.53 ◯ 264.79

			.			
			.			

6. 77.942 ◯ 77.07

			.			
			.			

7. 98.613 ◯ 98.43

			.			
			.			

8. 176.4 ◯ 176.34

			.			
			.			

Lesson 12 Exit Ticket

Part 1: Use **place value disks** to compare the decimal numbers

1. Ricky and Quinn competed in the 50-meter dash. Ricky's time was 8.12 seconds and Quinn's time was 8.19. Who took more time to finish the race?

_____ took more time to finish the race.

Part 2: Use digit comparison to compare the numbers. Then write a comparison for each pair using the greater than or less than symbol.

2. 68.52 and 68.341

Comparison: _____

3. 9.465 and 9.497

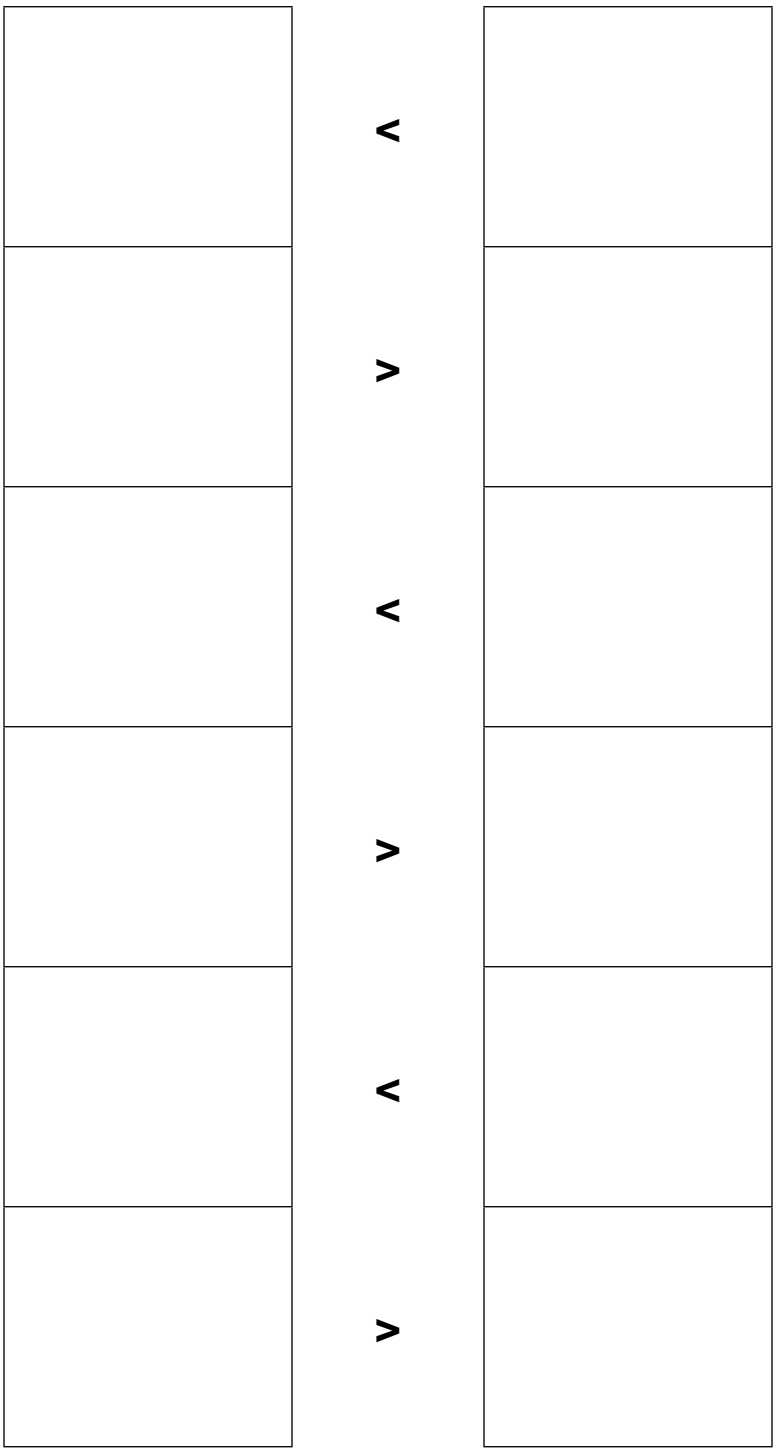
Comparison: _____

4. 10.802 and 12.801

Comparison: _____

Extra Practice: Decimal Compare

Cut out the Decimal Compare cards on page 97. Paste a number card into each box to make the comparisons true. Use **place value disks** or digit comparison to compare the numbers.



Decimal Place Value Charts (Thousandths)

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Decimal Place Value Charts (Thousandths)

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Ones		Tenths	Hundredths	Thousandths
	.			
	.			

Decimal Compare Cards

25.973	25.915	25.62
25.26	25.903	25.93
25.79	25.72	25.51
25.44	25.718	25.486

Flying Fish from Mars

Part 1: Use **place value disks** to round decimal numbers and answer questions.

1. I have been selling my comic, Flying Fish from Mars, during lunchtime at school. I figured out that, after I subtract expenses, I earn $0.218 for every comic I sell. How much do I earn, to the nearest cent?

a. Model $0.218 using place value disks.

b. To round to the nearest hundredth, which place should you look at to determine if you round up or round down? _____

c. What is $0.218 rounded to the nearest hundredth? _____

2. I need to buy plastic bags to protect the comic books. The label on the bags say they are 9.281 inches long. I'd like to round up to make sure my comic book fits inside. How long are the bags, to the nearest tenth?

a. Model 9.281 using place value disks.

b. To round to the nearest tenth, which place should you look at to determine if you round up or round down? _____

c. What is 9.281 rounded to the nearest tenth? _____

Part 2: Use rounding rules to round decimal numbers.

3. Round 7.423 to the nearest tenth. _____

4. Round 12.92 to the nearest one. _____

5. Round 1.293 to the nearest hundredth. _____

Round and Round

Review the example problem. Use rounding rules to round decimal numbers. You may use **place value disks** to help.

Example

Round **52.617** and **56.217** to the nearest one using rounding rules.

Step 1

Underline the place you are rounding to.

5 6 . 6 1 7 **5 6 . 2 1 7**

Step 2

Circle the digit to the right of the place you are rounding to.

5 6 . (6) 1 7 **5 6 . (2) 1 7**

Step 3

If the circled digit is 5 or greater, round up by increasing the underlined digit by 1. Each digit to the right changes to 0.

5 6 . (6) 1 7

Since 6 is greater than 5, I round up: 57.000 = 57

Step 4

If the circled digit is 4 or less, round down by keeping the underlined digit the same. Each digit to the right changes to 0.

5 (6) . 2 1 7

Since 2 is less than 5, I round down: 56.000.

1. 3.427 to the nearest tenth is _____.

2. 9.128 to the nearest hundredth is _____.

3. 12.408 to the nearest one is _____.

4. 183.92 to the nearest one is _____.

5. 627.04 to the nearest tenth is _____.

6. 8,871.5 to the nearest one is _____.

7. 35.567 to the nearest hundredth is _____.

8. 14.963 to the nearest hundredth is _____.

9. 532.86 to the nearest tenth is _____.

10. 36.95 to the nearest tenth is _____.

Lesson 13 Exit Ticket

Part 1: Use **place value disks** to round the decimal numbers.

1. 56.492 to the nearest hundredth is _____.

2. 3.256 to the nearest tenth is _____.

Part 2: Use rounding rules to round the decimal numbers.

3. 547.12 to the nearest one is _____.

4. 29.185 to the nearest tenth is _____.

5. 57.397 to the nearest hundredth is _____.

Extra Practice: Stretching Toward the Sun

Part 1: Use place value disks to round decimals and answer questions.

1. Young-hee measured a sunflower in her backyard using a digital measuring tape. The sunflower's height was 38.513 inches. She wants to round the height to the nearest hundredth.

a. Explain how you determine whether to round up or round down.

_____

_____

_____

b. 38.513 rounded to the nearest hundredth is _____.

Part 2: Determine if the number will round up or round down.

2. 22.854 to the nearest one _____

3. 0.53 to the nearest tenth _____

4. 176.928 to the nearest hundredth _____

Part 3: Use rounding rules to round each number to the specified place

5. 0.865 to the nearest hundredth _____

6. 437.36 to the nearest one _____

7. 608.4 to the nearest ten _____

Secret Message

Tia's mom and dad left a secret message for Tia to solve. The message tells Tia some exciting news. Round each number in the message to the nearest tenth using rounding rules. Then use the code to write the secret message.

A	**6.7**
B	**2.4**
C	**5.0**
D	**4.1**
E	**4.0**
F	**2.6**
G	**2.2**

H	**6.0**
I	**6.8**
J	**6.3**
K	**4.5**
L	**7.0**
M	**2.5**
N	**4.7**

O	**2.3**
P	**4.9**
Q	**2.0**
R	**6.6**
S	**6.5**
T	**4.6**
U	**3.9**

V	**4.8**
W	**3.0**
X	**6.9**
Y	**2.1**
Z	**1.0**

3.01	3.97		6.67	6.61	4.02

2.23	2.28	6.837	4.74	2.19

4.554	2.34

6.049	6.74	2.99	6.651	6.752	6.82

GlobalFest

Part 1: Solve the following problems using the standard algorithm. Use **place value disks** to help you answer the questions as you go.

1. Nesrine bought two baskets at GlobalFest to give to her friends. One baskets cost $6.07 and the other cost $5.82. What is the total of Nesrine's purchase?

Nesrine spent $_____on the baskets.

2. At the next booth, Nesrine purchased two blankets. One blanket cost $9.63 and the other blanket cost $8.42. How much did Nesrine spend on blankets?

Nesrine spent $_____on the baskets.

Part 2: Rewrite the expressions in the standard algorithm and solve.

3. 99.68 + 95.05 = _____

4. 22.4 + 57.62 = _____

5. 90.71 + 4.24 = _____

Chore Time

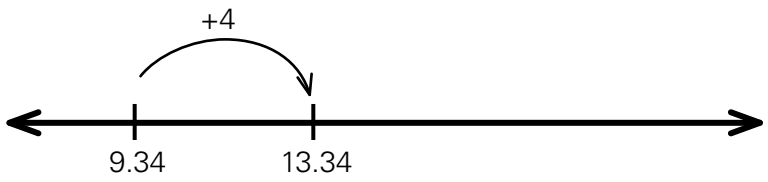
Review the example problem. Use a **number line** to add.

Example

Add **9.34** + **4.7** using a number line.

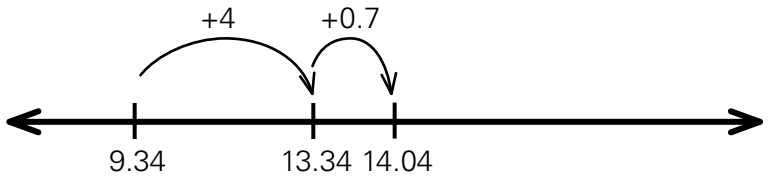
Step 1

Plot the larger addend on the number line. Add the whole number of the smaller addend on the number line.



Step 2

Add the next place value of the smaller addend, the tenths, on the number line to solve.



1. 6.07 + 5.82 = _____

2. 5.23 + 3.74 = _____

3. 9.5 + 25.46 = _____

4. 10.61 + 12.03 = _____

5. 36.59 + 30.31 = _____

6. 83.47 + 31.6 = _____

Lesson 14 Exit Ticket

Part 1: Add using the standard algorithm. You may use **place value disks** or drawings to help.

1. Harper has one bag of beads that is 16.8 ounces and another bag of beads that is 4.91 ounces. How many total ounces of beads does she have?

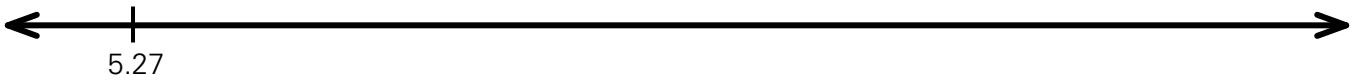
Harper has _____ ounces of beads.

2. Harper has blue ribbon that is 29.84 inches long and green ribbon that is 75.04 inches long. How many total inches of ribbon does she have?

Harper has _____ inches of ribbon.

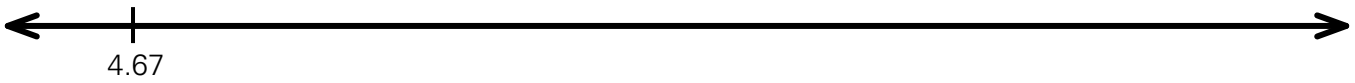
Part 2: Add using the number line.

3. 5.27 + 3.46 = _____



Extra Practice: Decimal Addition

Part 1: Use the following number line to solve the problem 4.67 + 2.39.



Part 2: Solve the following problems using your preferred method.

1. 92.4 + 0.32 = _____

2. 28.67 + 3.14 = _____

3. 10.81 + 6.09 = _____

4. 53.7 + 29.38 = _____

5. 36.59 + 5.8 = _____

Part 3: Circle the addition problems that will require regrouping. Draw a square around the problems that will not.

4.52 + 10.81

0.35 + 9.64

3.62 + 5.1

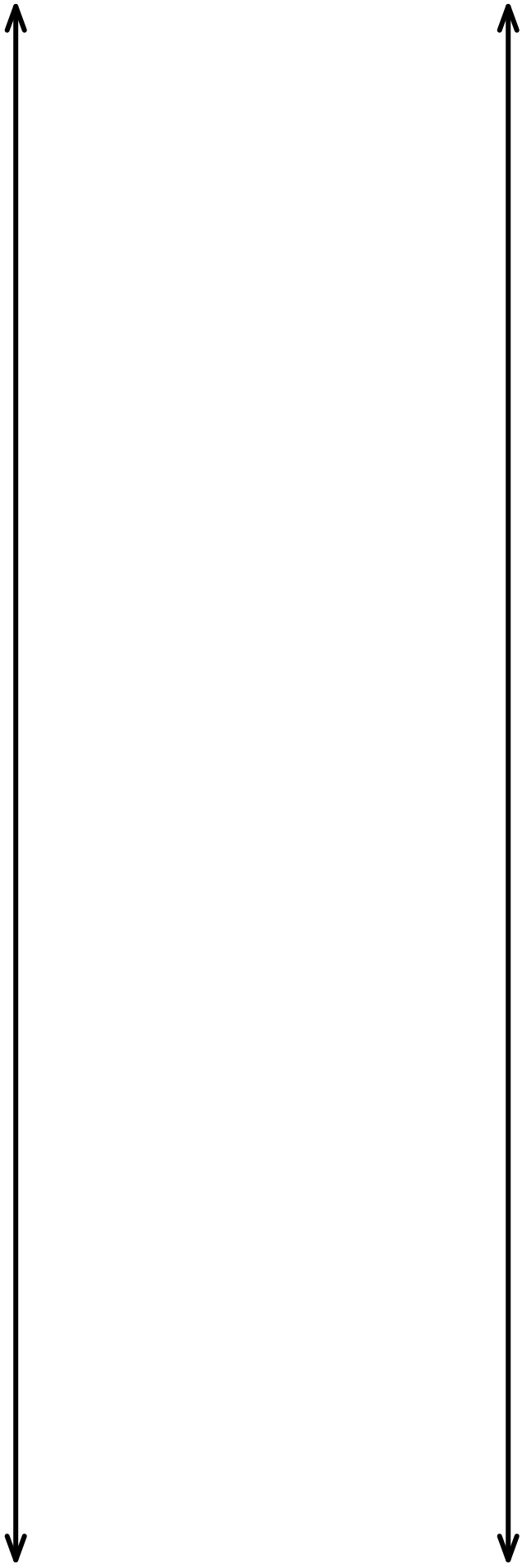
4.47 + 8.5

62.8 + 27.5

1.9 + 86.07

15.71 + 3.04

Open Number Lines



Open Number Lines

Open Number Lines

Decimal Addition 9-Square

Add squares left to right or top to bottom to find the third square in each row or column. Fill in the empty squares.

1.52	8.6	
4.7	6.39	

Desert Trails Wildlife Rescue

Part 1: Solve the following problems using the standard algorithm. Use **place value disks** to help you answer the questions as you go.

1. A young coyote sleeps in a big plastic bin with many warm blankets. The bin weighs 11.29 pounds. The coyote and the bin together weigh 25 pounds. How much does the coyote weigh?

The coyote weighs _____ pounds.

2. A turtle won't sit on a scale, so Rikki places him on a can so his feet don't reach the ground. The can weighs 435.25 grams. The can and the turtle weigh 1,198.05 grams. How much does the turtle weigh?

The turtle weighs _____ grams.

Part 2: Rewrite the expressions in the standard algorithm and solve.

3. 9.36 – 5.18 = _____

4. 4.26 – 2.14 = _____

5. 33.98 – 5.314 = _____

Fox Weight

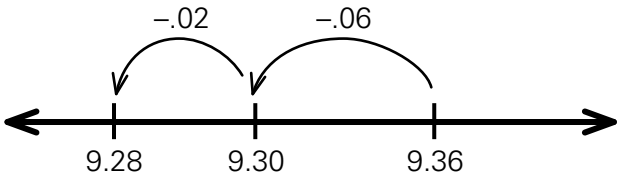
Review the example problem. Use a **number line** to subtract.

Example

Subtract **9.36 – 5.18** using a number line

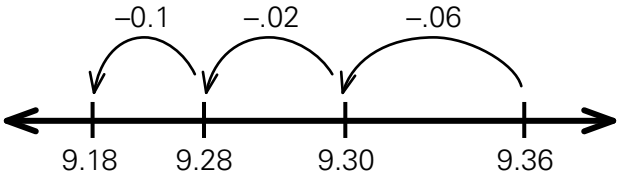
Step 1

Place the greater number on the number line and subtract the smallest place value from it. Use friendly numbers if it helps.



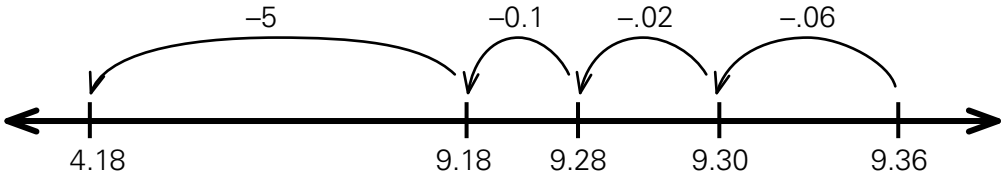
Step 2

Next, subtract the next smallest place value from the number.



Step 3

Finally, subtract the greatest place value from the number and solve.



9.36 – 5.18 = 4.18

1. A scared fox cub needs to be weighed with a man holding the fox in his arms. Together, the fox and man weigh 162.85 pounds. The man weighs 155.53 pounds. How much does the fox weigh?

The fox weighs _____ pounds.

2. 5.29 – 2.41 = _____

3. 1.24 – 0.52 = _____

4. 43.77 – 9.52 = _____

5. 400.6 – 52.27 = _____

Lesson 15 Exit Ticket

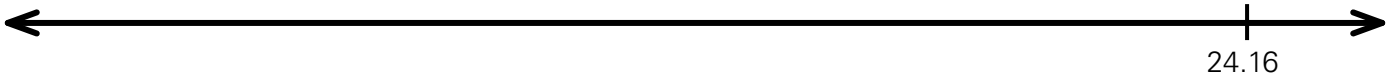
Part 1: Subtract using the standard algorithm. Use may use **place value disks** or drawings to help.

1. 12.9 – 5.7 = _____

2. 92.6 – 5.12 = _____

Part 2: Subtract using the number line.

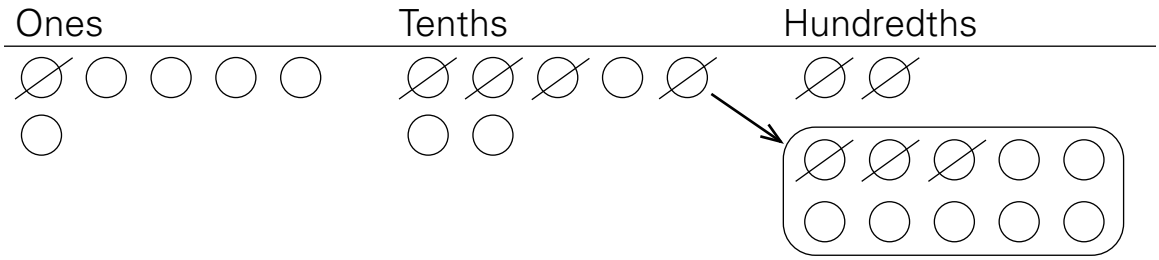
3. 24.16 – 8.5 = _____



Extra Practice: Decimal Subtraction

Part 1: Determine what Lucas did wrong while subtracting, and help him find the right answer.

1. Lucas subtracted 6.72 – 1.45 as shown.



6.72 – 1.45 = 5.37

a. What mistake did Lucas make? _____

_____

_____

b. What is the correct difference? _____

Part 2: Subtract using any model you choose.

2. 156.48 – 92.71 _____

3. 3.14 – 0.8 _____

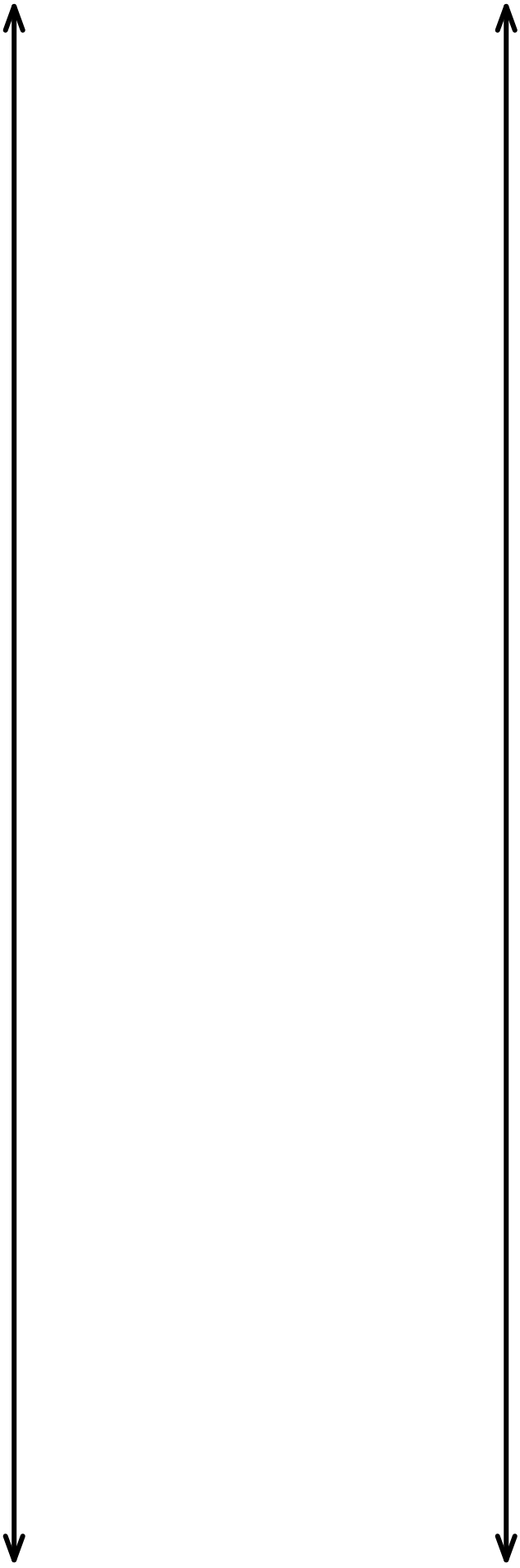
4. 75.09 – 21.05 _____

5. 70.1 – 3.28 _____

6. 7.56 – 6.2 _____

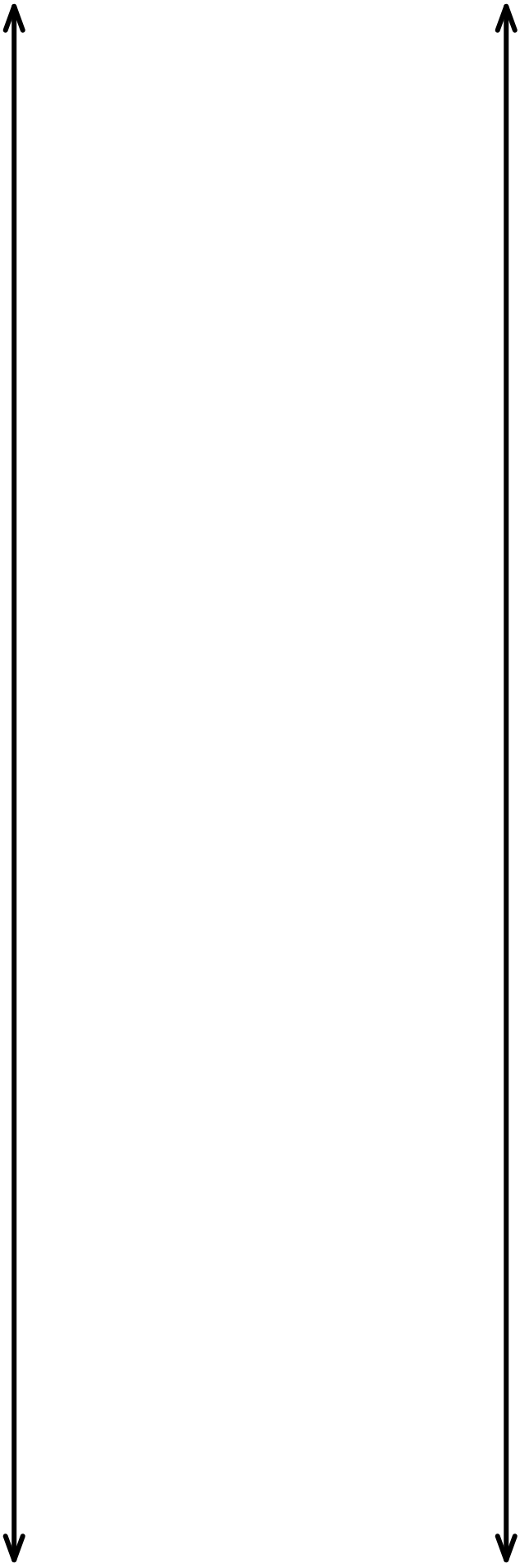
7. 811.8 – 75.82 _____

Open Number Lines



Open Number Lines

Open Number Lines



Open Number Lines

Assessment

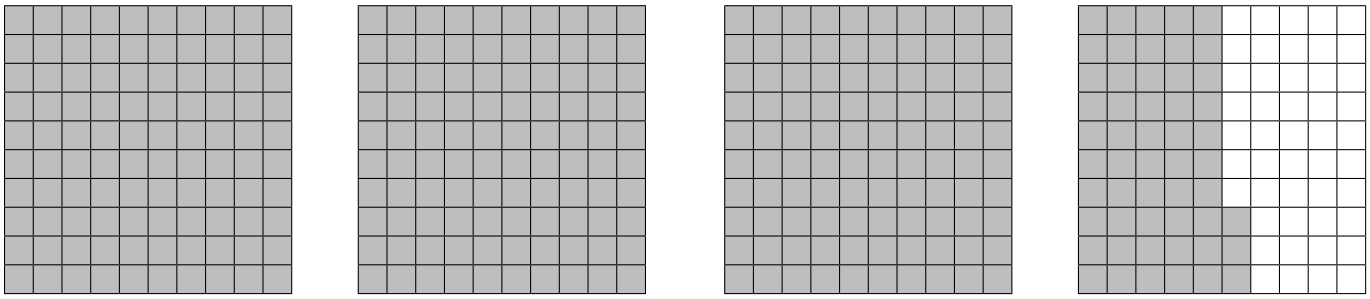
Unit 2 Assessment

1. Charlie multiplied 18.5 by 10. He exchanged 5 tenths place value disks for 5 ones place value disks. Was this a correct way to begin to solve the problem? Explain.

_____

_____

2. Write the amount of money that the 10 × 10 grids represent in decimal form. Then say how many wholes and hundredths in the number.



$_____ = _____ whole dollars and _____ hundredths

3. Write the decimal as a mixed number. Then write it in word form.

2.37 = _____ Word form: _____

4. Write the decimal in expanded form.

74.612 = _____

5. Demarcus wants to compare 5.408 and 5.421.

a. Which place value tells you which number is greater? _____

b. Write a comparison for these numbers using > or <. _____

6. What is 0.834 rounded to the nearest hundredth? Use rounding rules and answer the question.

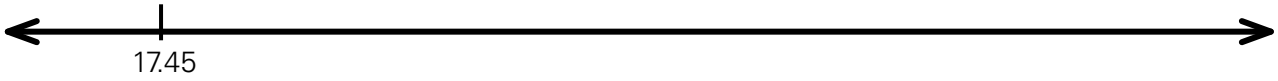
0.834 rounded to the nearest hundredth = _____

Explain how you used rounding rules to round.

_____

_____

7. Add using the number line. 17.45 + 5.13 = _____



8. Emma listened to two podcasts. The first podcast was 34.92 minutes long, and the second podcast was 41.65 minutes long. How much time did Emma spend listening to the podcasts?

_____

9. Subtract using the number line. 5.13 – 2.74 = _____

10. Subtract 37.69 – 6.35.

a. Will you need to do any regrouping in this subtraction? If so, in which place(s)?

_____

b. The difference of 37.69 – 6.35 is _____.

Unit 2 Cumulative Review

1. The fifth-grade classes at Hillcrest Elementary have a total of 108 students. Coach Park wants to put the fifth-graders into 9 equal teams for Field Day. How many fifth-graders will be on each Field Day team?

There will be _____ fifth graders on each team.

2. A T-shirt costs $5. A pair of jeans costs 8 times as much as a t-shirt.

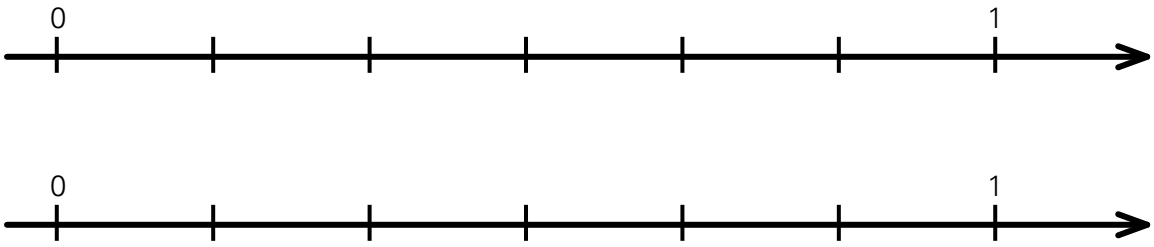
a. Draw a tape diagram to model the cost of the T-shirt and the jeans.

b. How much does a pair of jeans cost?

3. Multiply. $7 \times 10^5 =$ _____

4. Megan and Ali are sharing a bag of marbles. Megan got $\frac{2}{6}$ of the marbles and Ali got $\frac{2}{3}$ of the marbles.

a. Complete the double number line to compare the fractions.



b. Who got a greater share of the marbles? Explain. _____

_____

_____

c. Write a comparison for $\frac{2}{6}$ and $\frac{2}{3}$. _____

5. Multiply. $18 \times 36 =$ _____

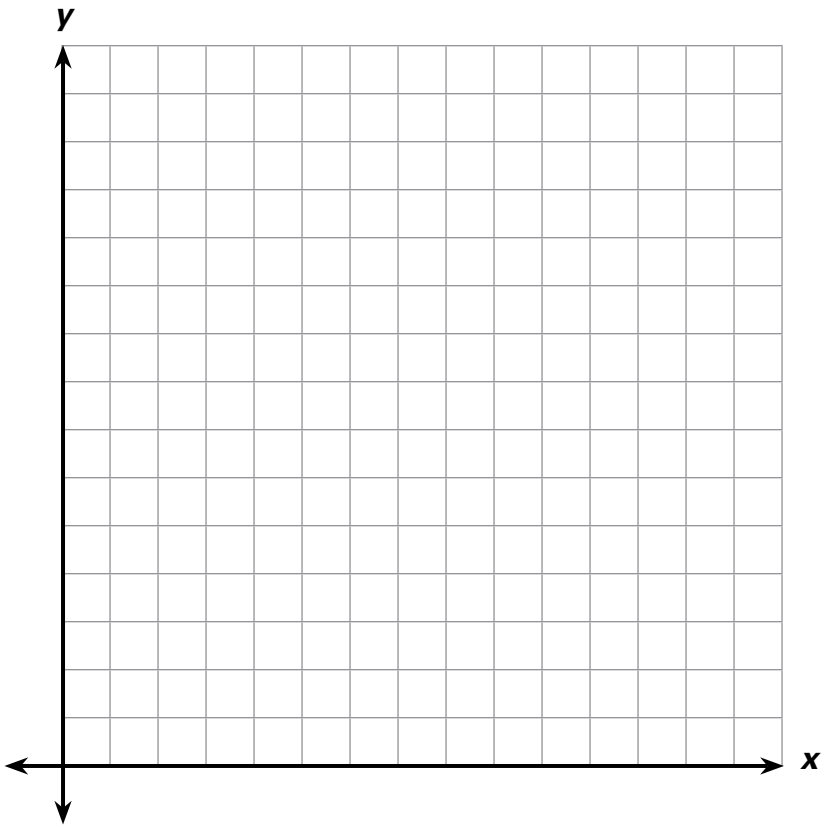
6. Use the identity property of multiplication algorithm to determine if $\frac{5}{8}$ and $\frac{15}{24}$ are equivalent fractions. Show your work and complete the sentence.

The fractions $\frac{5}{8}$ and $\frac{15}{24}$ _____ equivalent.

7. Multiply. Show your work.

$6 \times 700 =$ _____

8. Plot points for the ordered pairs (6, 4) and (1, 9) on the coordinate plane.



9. Bryce went out for pizza with a group of friends. There were 7 people total. Each person had $\frac{1}{12}$ of the pizza.

a. Draw a tape diagram to represent the total amount of pizza Bryce and his friends ate.

b. Write an addition equation that shows the total amount of pizza.

c. Write a multiplication equation that shows the total amount of pizza.

10. Write a comparison for 5.72 and 5.6.

_____

11. Oranges cost $2 per pound. Keyshawn bought 8 pounds of oranges. He gave the cashier a $20 bill. How much change did the cashier give back to Keyshawn? _____

12. For four days in a row, Campbell used $\frac{1}{2}$ cup of milk in her cereal at breakfast. How much milk did she use in total?

She uses _____ cups of milk in total.

13. Write the fraction as a decimal.

$\frac{7}{100}$ = _____

14. Complete the place value chart to model 48.3 ÷ 100.

Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths

15. Write the next five terms in the pattern using the rule "add 7, subtract 3."

6, 13, 10, . . . _____

Unit 3:

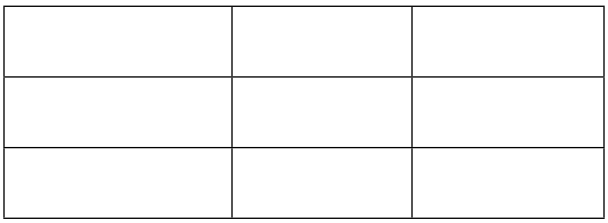
Multiplication and Division with Large Numbers

Catapult Learning™

Community Service Project

Draw an area model and add partial products to find each product.

1. Harper is in charge of getting the disposable plastic trays ready for dinner service at a soup kitchen. The trays are in a big bin. Each bin has 115 bags of trays and there are 325 trays in each bag. How many trays are there?



There are _____ trays.

2. Billy is organizing a litter pick up. He has 523 volunteers signed up in the county. He is challenging each volunteer to pick up 222 pieces of litter. How many total pieces of litter will the volunteers pick up if they meet Billy's challenge?

They will pick up _____ pieces of litter.

3. Kara organizes free tutoring after school. There are 34 tutors. Each tutor does library homework help for 185 hours during the school year. How many total hours do the tutors help kids with homework?

They help kids for _____ hours.

Recycling

Review the example problem. Use **area models** and the distributive property to find the products. Show your work.

Example

Mill Bank Elementary School collects aluminum cans to recycle. Each week, they recycle **174** cans. How many cans will the school have recycled after **31** weeks?

Step 1

Write the factors in expanded form.

31 = 30 + 1

174 = 100 + 70 + 4

Step 2

Draw an area model using expanded factors as side lengths.

	100	70	4
30			
1			

Step 3

Write an equation to represent the area of each column of the model.

	100	70	4
30			
1			

100 × (30 + 1) 70 × (30 + 1) 4 (30 + 1)

Step 4

Use the distributive property to find the partial products. Then add to find the total product.

100 × (30 + 1) = (100 × 30) + (100 × 1) = 3,000 + 100 = 3,100
70 × (30 + 1) = (70 × 30) + (70 × 1) = 2,100 + 70 = 2,170
4 × (30 + 1) = (4 × 30) + (4 × 1) = 120 + 4 = 124

3,100 + 2,170 + 124 = 5,394 **31** × **174** = 5,394

The school will recycle 5,394 cans.

1. 45 × 23 = _____ **2.** 355 × 82 = _____ **3.** 464 × 51 = _____

Lesson 17 Exit Ticket

Part 1: Multiply using an area model and partial products.

1. 165 × 328 = _____

Part 2: Multiply using an area model and the distributive property.

2. 256 × 54 = _____

Extra Practice: Collections

Determine whether the following statements are *true* or *false*.

1. There is more than one process to find the product of two 2-digit numbers. _____

2. When using the distributive property in multiplication, each part of the first term is multiplied by each part of the second term. _____

3. To find partial products, divide an area model into two sections. _____

4. You can expand factors when using an area model to visualize multiplication. _____

5. 57×19 is the same as $(5 + 7) \times (1 + 9)$. _____

Use area models and the distributive property to find the product.

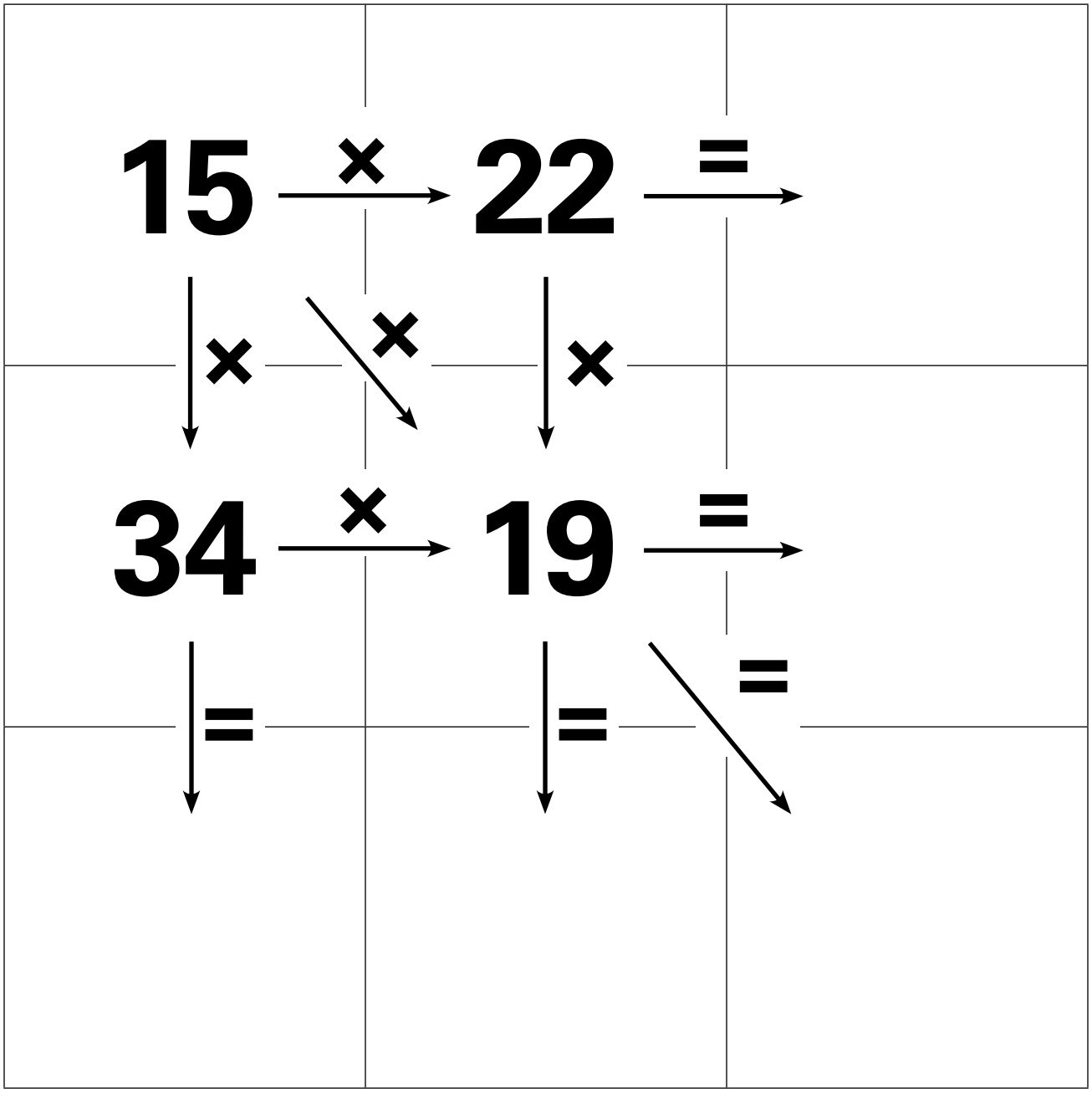
6. Mr. Johnson has been collecting soda bottle caps for 45 years. He was very precise and drank 175 bottles of soda each year. How many bottle caps does Mr. Johnson have?

a. Draw an area model to represent the problem.

b. Solve using the distributive property.

Mr. Johnson has _____ bottle caps in his collection.

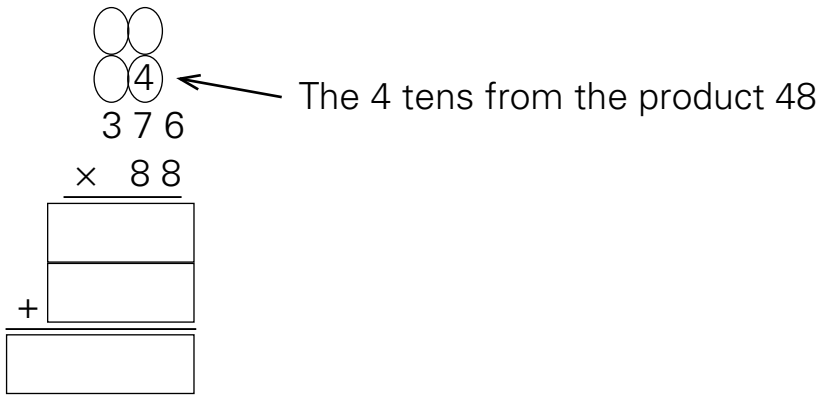
Multiplication 9-Square



Space Years

Part 1: Use the standard multiplication algorithm to find the products. Then label each part of your algorithm.

1. A year on Mercury is 88 days. How many days are in 376 years on Mercury?



There are _____ days in 376 years on Mercury.

Part 2: Use the standard multiplication algorithm to find the products.

2. 7 6 7
× 8 2 6

3. 9 3 7
× 1 0 2

4. 4 9 6
× 3 9 6

Years and Years

Review the example problem. Use the standard algorithm to multiply.

Example

There are **225** days in a year on Venus. How many days are there in **85** Venus years?

Step 1

Write the multiplication equation vertically, aligned by place.

```
 225
×  85
```

Step 2

Begin by multiplying the ones digit of the second factor by each digit in the first factor. Regroup as you multiply, "carrying" the regrouped values to the top of the next place to the left.

```
  12
 225
×  85
1125
```

Step 3

Continue by multiplying the tens digit of the second factor by each digit in the first factor, regrouping as you multiply. Remember that you are multiplying a ten, so put a 0 in the ones place to begin.

```
  24
  12
 225
×  85
1125
18000
```

Step 4

Add partial products together.

```
  24
  12
 225
×  85
1125
18000
19125
```

1.

```
 7593
×  718
```

2.

```
 870
×  69
```

3.

```
 299
×313
```

4.

```
 844
×567
```

5.

```
6323
× 172
```

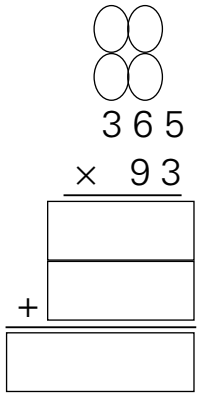
6.

```
 236
×  35
```

Lesson 18 Exit Ticket

Part 1: Use the standard multiplication algorithm to find the products. Then label each part of your algorithm.

1. A year on Earth is 365 days. How many days are in 93 years on Earth?



There are _____ days in 93 years on Earth.

Part 2: Use the standard multiplication algorithm.

2.

$$\begin{array}{r} 914 \\ \times\ 77 \\ \hline \end{array}$$

3.

$$\begin{array}{r} 145 \\ \times 384 \\ \hline \end{array}$$

4.

$$\begin{array}{r} 4575 \\ \times 452 \\ \hline \end{array}$$

Extra Practice: Algorithm Practice

1.

673
× 31

2.

132
× 149

3.

7842
× 616

4.

5182
× 717

5.

696
× 79

6.

362
× 307

7.

989
× 39

8.

9800
× 974

9.

713
× 56

10.

608
× 27

11.

434
× 641

12.

6517
× 168

13.

1463
× 416

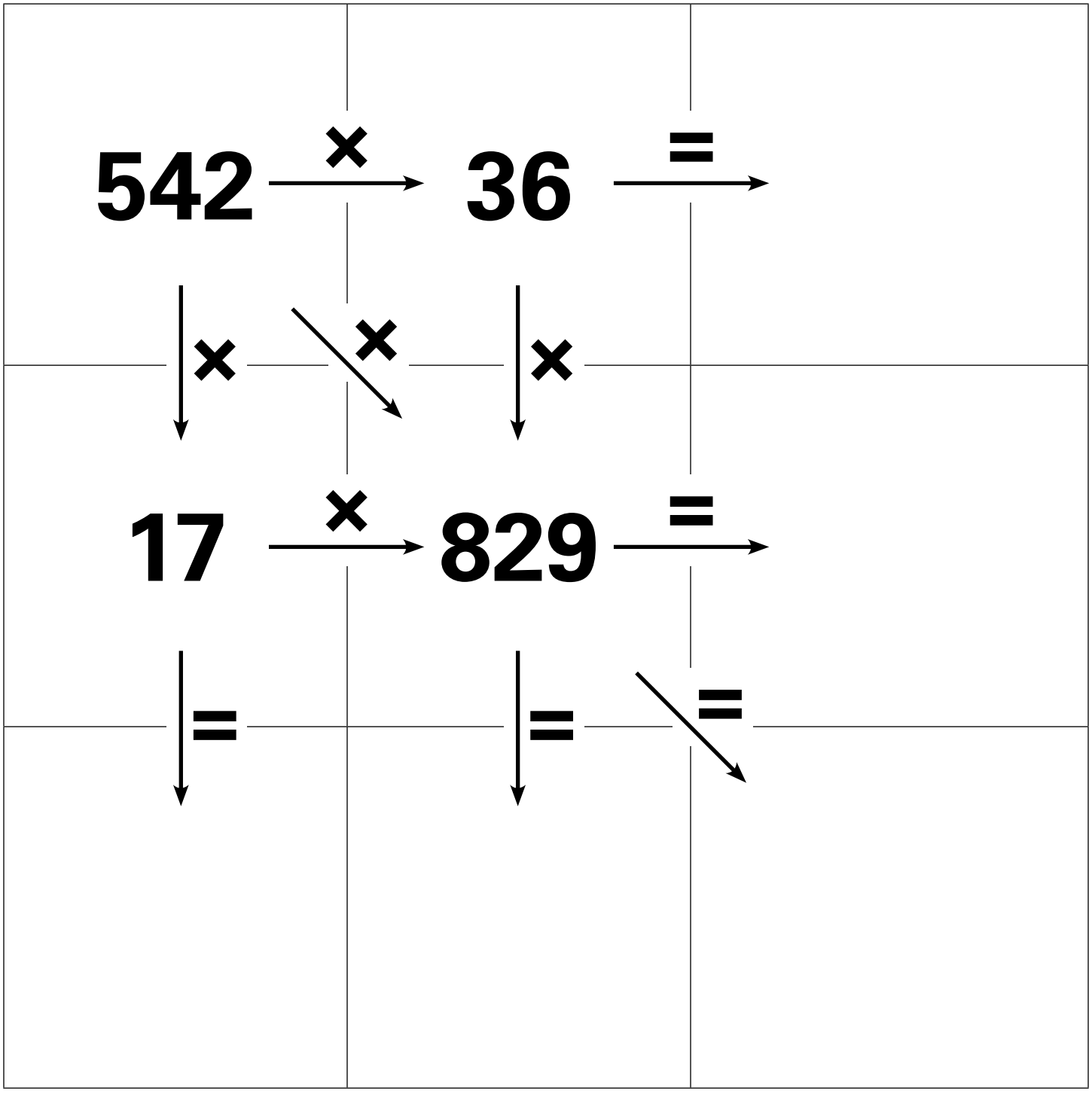
14.

421
× 81

15.

618
× 761

Multiplication 9-Square



Factor Pick

Table 1

27,588	326,697	291,827
567,769	19,292	5,670

Table 2

Table 3

Table 4

Art Supplies

Part 1: Use **place value disks** to divide.

1. Ms. Perkins bought 810 ounces of clear glaze for the students to use on their ceramic vases. She wants to divide the glaze into individual containers so each student has 54 ounces of their own glaze to use. How many containers can she make?

810 ÷ 54 = _____ She can make _____ containers.

2. Ms. Perkins has 234 tubes of paint. She sorts the tubes into small boxes. Each box has 13 tubes of paint. How many boxes of paint does she have?

234 ÷ 13 = _____ She has _____ boxes of paint.

3. Ms. Perkins has 784 paintbrushes. She puts the brushes into bags for storage. If she puts 49 paintbrushes into each bag, how many bags does she need?

784 ÷ 49 = _____ She needs _____ bags.

Part 2: Use the **partial quotients** algorithm to divide.

4. Ms. Perkins has 945 sheets of construction paper. Each student needs 21 sheets of paper for a special project. How many students can she give the needed amount of paper to?

945 ÷ 21 = _____ She has enough paper for _____ students.

5. Ms. Perkins has 297 yards of ribbon. She wants to put 27 yards of ribbon on each table in her classroom. How many tables will have 27 yards of ribbon?

297 ÷ 27 = _____ She has enough ribbon for _____ tables.

Partial Quotients

Review the example problem. Use the partial quotients algorithm to divide. Show your work.

Example

Divide **896** ÷ **64**.

Step 1

Write the division equation in the partial quotients algorithm.

64 ⟌ 896

Step 2

Multiply the divisor, 64, by 10 and subtract from the dividend, 896. Ten is a partial quotient. Write it to the side.

64 ⟌	896	
	– 640	10
	256	

Step 3

Determine the number of times the divisor equals the remaining dividend. Continue until the dividend is 0.

64 ⟌	896	
	– 640	10
	256	
	– 256	4
	0	

Step 4

Add the partial quotients together.

10 + 4 = 14

896 ÷ 64 = 14

1. 2,225 ÷ 89 = _____	**2.** 2,304 ÷ 64 = _____	**3.** 1,150 ÷ 50 = _____
4. 816 ÷ 48 = _____	**5.** 703 ÷ 37 = _____	**6.** 648 ÷ 27 = _____

Lesson 19 Exit Ticket

Use **place value disks** and the partial quotients algorithm to divide. Show your work.

1. 1,235 ÷ 95 = _____

Use the partial quotients algorithm to divide. Show your work.

2. 2,187 ÷ 81 = _____

81 | 2,187

3. 1,104 ÷ 69 = _____

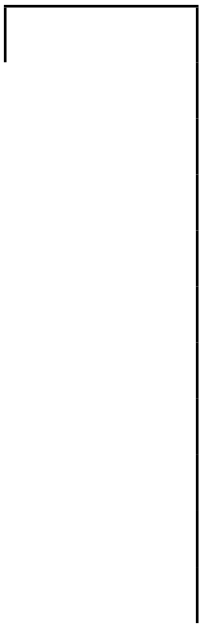
Extra Practice: Photo Booth

Use **place value disks** and the partial quotients algorithm to divide. Show your work.

Nolan likes to photograph birds in nature. He sells prints of his photos at different art festivals. All his prints are $25. The table shows how much money Nolan made at some of the festivals.

Festival	Money Made
Spring Fling	$1,150
Greensville Fair	$2,325
Willowbrook Arts Weekend	$1,450

1. How many prints did Nolan sell at the Spring Fling Festival?



Nolan sold _____ prints at the Spring Fling Festival.

2. How many prints did Nolan sell at the Greensville Fair?

Nolan sold _____ prints at the Greensville Fair.

3. How many prints did Nolan sell at the Willowbrook Arts Weekend?

Nolan sold _____ prints at the Willowbrook Arts Weekend.

Art Celebration Week

Use area models to divide by 2-digit divisors and answer the questions.

1. The art classes will make a mosaic to hang in the school. The mosaic will have 3,690 tiles. 15 students will work on the mosaic, each setting the same number of tiles. How many tiles will each student set?

a. Write a division equation to model the problem: _____

b. Write a related multiplication equation: _____

c. Label the dividend and divisor on the area model and solve.

Each student will set _____ tiles.

2. During art celebration week, 25 teachers will give presentations about art and artists. The teachers will divide 1,175 minutes of learning time equally. How many minutes will each teacher have for their presentation?

a. Write a division equation to model the problem: _____

b. Write a related multiplication equation: _____

c. Label the dividend and divisor on the area model and solve.

Each teacher will have _____ minutes for their presentation.

Popsicle Time!

Review the example problem. Use area models to divide. Show your work.

Example

The cafeteria is buying popsicles for art celebration week. They need **4,712** total popsicles. The popsicles come in boxes of **38**. How many boxes does the cafeteria need to buy?

Step 1

Write a division equation and a related multiplication equation to represent the problem. Draw an area model, showing the factors as side lengths and the product as the area.

4,712 ÷ **38** = *b*
38 × *b* = **4,712**

38	**4,712**

Step 2

Make a number of groups using a multiple of 10. This number of groups is the first partial quotient. Write the partial quotient outside the area model. Calculate the partial product and write it inside the area model.

	100	
38	**4,712** 3,800	

Step 3

Subtract the partial product from the total area to see how much is left to divide.

	100	
38	**4,712** –3,800 912	

Step 4

Make more groups (partial quotients) until the total area is divided. Add the partial quotients to find the total quotient.

	100	10	10	1	1	1	1
38	**4,712** –3,800 912	912 –380 532	532 –380 152	152 –38 114	114 –38 76	76 –38 38	38 –38 0

100 + 10 + 10 + 1 + 1 + 1 + 1 = 124

4,712 ÷ **38** = 124

1. 6,232 ÷ 38 = _____ **2.** 1,540 ÷ 44 = _____ **3.** 3,354 ÷ 26 = _____

Lesson 20 Exit Ticket

Write a related multiplication equation to help you set up an area model. Then use the area model to find the quotient.

1. 752 ÷ 16 = *p*

a. Write a related multiplication equation: _____

b. Draw an area model.

752 ÷ 16 = _____

2. 2,772 ÷ 21 = *c*

a. Write a related multiplication equation: _____

b. Draw an area model.

2,772 ÷ 21 _____

Extra Practice: Big Town Stadium

The table shows the school days at Big Town Stadium. Each date has a number of seats available for schools that are visiting. The schools have to share the seats equally. Complete the table to show how many seats each school can have.

Big Town Stadium School Days			
Date	**Available Seats**	**Number of Schools**	**Seats per School**
April 14	8,384	64	
May 17	5,146	62	
June 4	4,160	52	

April 14

Multiplication Equation: _____ Division Equation: _____

Area Model:

May 17

Multiplication Equation: _____ Division Equation: _____

Area Model:

June 4

Multiplication Equation: _____ Division Equation: _____

Area Model:

Restaurant Compost

Use the standard division algorithm to find the quotients. Multiply to check your work.

1. Some of the smaller restaurants use smaller barrels that hold 46 pounds of food waste. This week, 4,830 pounds of compost are collected. How many barrels are collected?

46 ⟌ 4830

Check your work:

_____ barrels are collected.

2. The community compost gets $8,253 in donations from 21 local restaurants. Each restaurant donates the same amount. How much did each restaurant donate?

21 ⟌ 8253

Check your work:

Each restaurant donates _____ dollars.

Pound Puzzle

Review the example problem. Use the standard division algorithm to find the quotients.

Example

Divide **7,788** ÷ **59**.

Step 1

Write the division equation in the long division format.

59 ⟌ **7788**

Ask "How many **59s** are in 77?"

There is one **59** in 77, so the first digit of the quotient is 1.

Step 2

The digit 1 in the quotient means that 59 goes into 7,788 one hundred times. Multiply the divisor by the partial quotient, then subtract to find out how much is left to divide.

59 × 100 = 5,900

```
     1
59 ⟌ 7788
   – 5900
     1888
```

Step 3

Continue dividing, multiplying, and subtracting until there is nothing left to divide.

```
     100
59 ⟌ 7788
   – 5900
     1888
   – 1770
      118
    – 118
        0
```

Step 4

Multiply the quotient by the divisor to check your work. The product should equal the original dividend.

132 × **59** = **7,788**, so **7,788** ÷ **59** = 123.

1. 1,216 ÷ 16 = _____ **2.** 8,525 ÷ 25 = _____ **3.** 8,073 ÷ 39 = _____

Lesson 21 Exit Ticket

Use the standard division algorithm to find the quotients.

1. 3,925 ÷ 25 = _____

2. 3,838 ÷ 19 = _____

3. Use multiplication to check one of your answers above.

Extra Practice: Division Algorithm

Determine whether the following statements are *true* or *false*.

1. The standard division algorithm is also called short division. _____

2. You can verify a division quotient by multiplying the quotient times the divisor. _____

3. Zeros in the quotient are not necessary when dividing by a 2-digit divisor. _____

4. The dividend times the quotient should equal the divisor. _____

5. In the standard division algorithm, subtracting will show what is left to still divide. _____

Divide. Verify your quotient using multiplication.

6. $61\overline{)8845}$

7. $35\overline{)7630}$

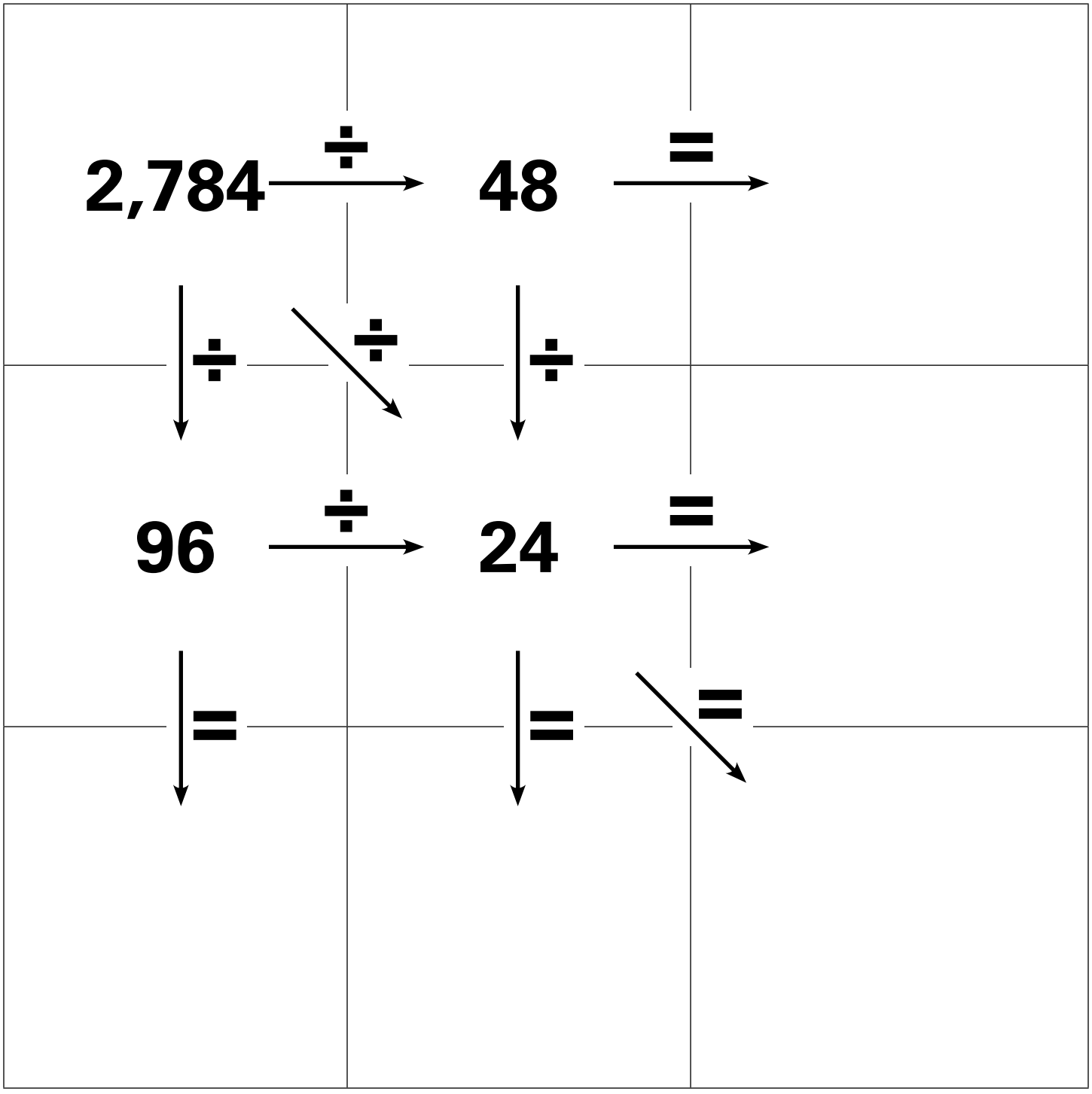
8. $86\overline{)9374}$

9. $28\overline{)4788}$

10. $39\overline{)7917}$

11. $64\overline{)1152}$

Division 9-Square



Assessment

Unit 3 Assessment

1. Nia is volunteering at a charity fun run. Her job is to give out bottles of water. Each bottle has 16 ounces of water. During the run, Nia gave out 87 bottles. She wonders how many ounces of water she gave out.

a. Draw an area model of the multiplication using expanded factors.

b. Write and solve the partial product equations from your area model in part a.

c. Nia gave out _____ ounces of water during the run.

2. Multiply using the distributive property. Show your work. You can draw an area model to help.

$54 \times 29 =$ _____

3. Belinda solved 182 × 68 as shown.

```
    4 1
   6 X
    1 8 2
×     6 8
  1 4 5 6
+ 1 0 9 2
  2 5 4 8
```

a. What mistake did Belinda make? _____

_____

b. What is the correct product? Show your work.

182 × 68 = _____

4. Multiply. Show your work.

```
  492
× 361
```

5. Jalen makes and sells wooden birdhouses for $18 each. He has made $3,672 from the sales. How many birdhouses has he sold? Use the partial quotients algorithm to solve.

Jalen sold _____ birdhouses.

6. Divide. Use the partial quotients algorithm.

1,748 ÷ 76 = _____

7. Dev has $546 and is buying video games. Each game costs $14. How many games can he buy? Draw and solve an area model to represent the division.

Dev can buy _____ games.

8. Brandon has 450 sheets of paper to print out copies of his report. Each report takes 25 sheets of paper. How many copies of his report can Brandon print? Draw and solve an area model to represent the division.

Brandon can print _____ copies.

9. Divide 4,920 ÷ 15 using the standard division algorithm. Show your work.

10. Divide. Show your work.

9,078 ÷ 34 = _____

$34\overline{)\ 9078}$

Check your work using the multiplication algorithm. Show your work.

Unit 3 Cumulative Review

1. Caleb has friends over for pizza and movies. His mom orders several pizzas—some cheese, and some pepperoni. After the friends are done eating, $\frac{5}{12}$ of a cheese pizza and $\frac{1}{3}$ of a pepperoni pizza are left over. Is there more cheese pizza or pepperoni pizza left over?

a. Model $\frac{5}{12}$ and $\frac{1}{3}$ on a tape diagram.

b. Explain how to determine which fraction is greater. _____

_____

_____

_____

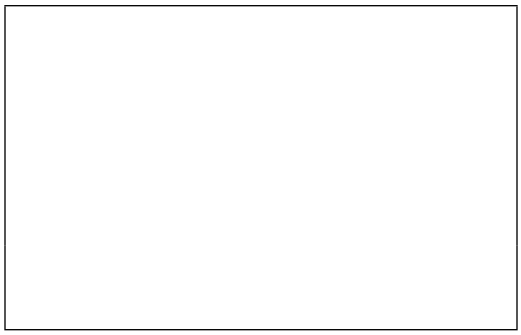
c. Which type of pizza had more left over, cheese or pepperoni? _____

2. Multiply. Show your work. $607 \times 21 =$ _____

3. A bookstore ordered 14 boxes of the new book *Grossest Bugs!* Each box has 36 books. How many books did the store order?

a. Write a multiplication equation to represent the problem. _____

b. Use an area model and partial quotients to solve.



c. The store ordered _____ books.

4. Sigal has 0.86 yards of blue fabric and 0.79 yards of green fabric. Does he have more blue or green fabric?

Sigal has more _____ fabric.

5. Divide. Show your work. 4,941 ÷ 27 = _____

6. In gym class, there are 112 students. Coach Romero needs to divide the students into 8 equal groups. How many students are in each group? Write an equation and solve.

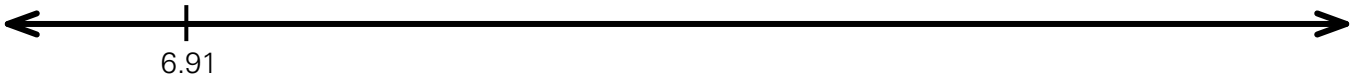
_____ ÷ _____ = _____

There are _____ students in each group.

7. Use a number string to multiply 6×10^5. Show your work.

6×10^5 = _____

8. Add. 6.91 + 2.47 = _____



9. Lucas' family had a yard sale this weekend. They made $237 on Friday and $268 on Saturday. They are going to split the money they made evenly among the 5 family members. How much money does each family member get?

Each family member gets _____ dollars.

10. Sayeed is baking a cake. The recipe says to put in $\frac{6}{8}$ of a teaspoon of vanilla extract. Looking in the kitchen drawer, Sayeed can only find a $\frac{1}{4}$ teaspoon. What equivalent fraction can he use to measure the vanilla?

Sayeed should use _____ teaspoons of vanilla.

11. Vanessa wrote 43.851 as the fraction $43\frac{851}{100}$.

a. What mistake did Vanessa make? _____

_____

_____

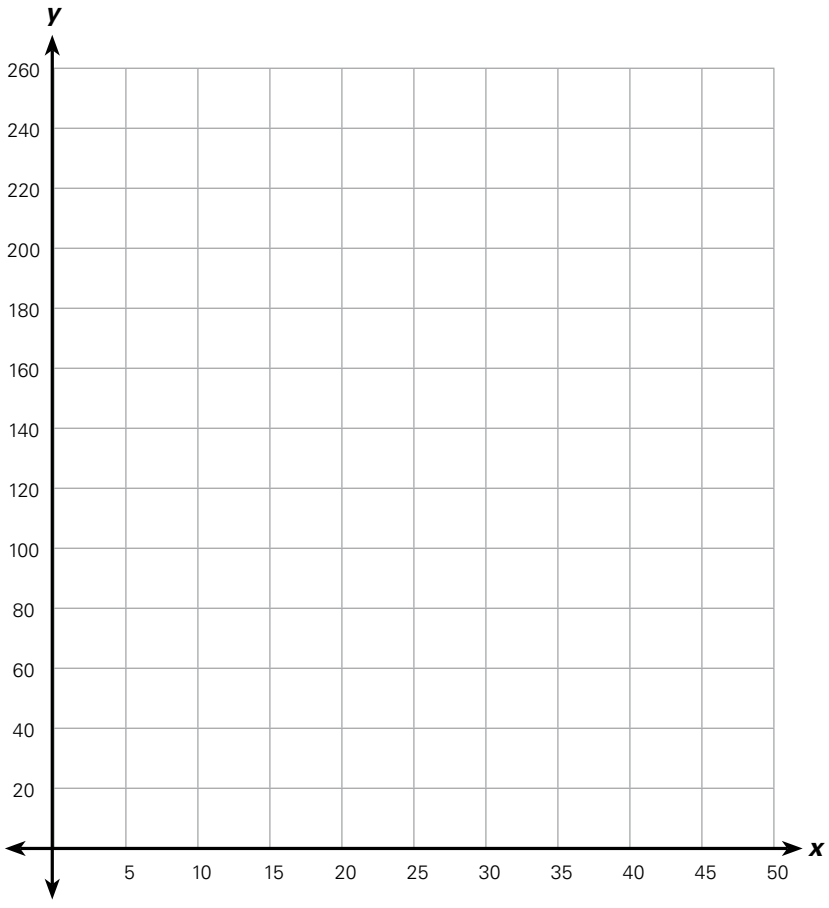
_____

b. What is the correct fraction form of 43.851? _____

12. Subtract. Show your work. $6\frac{5}{8} - 2\frac{7}{8} =$ _____

13. The table shows the amount of money made in sales for different numbers of movie tickets. Plot the data from the table on the coordinate plane. Include axes labels.

Movie Tickets Sold	Money Made
5	$40
10	$80
15	$120
25	$200
30	$240



14. Multiply. Show your work.

$4 \times \frac{5}{6} =$ _____

15. Ahmed is 8 years old. Ahmed's father is 7 times older than Ahmed. How old is Ahmed's father?

Ahmed's father is _____ years old.