Mixed-Number Multiplication

Home Link 7-1

NAME DATE TIME

SRB 204-205

For Problems 1 and 2:

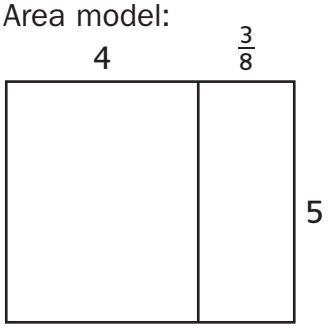
- Use the rectangle to make an area model. Label the sides. The model in Problem 1 has been started for you.
- Find and list the partial products. Label the partial products in the area model.
- Add the partial products to find your answer. You may need to rename fractions with a common denominator.

① $4\frac{3}{8} * 5 = ?$

Partial products:

$4\frac{3}{8} * 5 =$ _____

Area model:

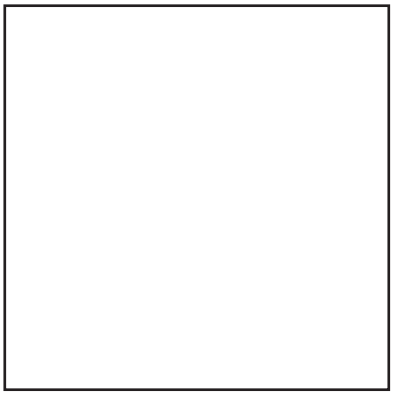


② $2\frac{3}{5} * 3\frac{1}{3} = ?$

Partial products:

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

Area model:



③ Write a number story that matches Problem 1.

_____

_____

_____

Practice

Solve.

④ $\frac{2}{3} + \frac{5}{8} =$ _____

⑤ $\frac{1}{16} + \frac{3}{4} =$ _____

More Mixed-Number Multiplication

Home Link 7-2

NAME DATE TIME

Solve Problems 1 and 2 using the method in the example below. Show your work.

SRB 204-206

Example: $2\frac{1}{5} * 1\frac{3}{4}$

- Rename any mixed or whole numbers as fractions: $2\frac{1}{5} = \frac{11}{5}$; $1\frac{3}{4} = \frac{7}{4}$
- Rewrite the problem using the fractions as factors: $\frac{11}{5} * \frac{7}{4}$
- Multiply using a fraction multiplication algorithm: $\frac{(11 * 7)}{(5 * 4)} = \frac{77}{20}$, or $3\frac{17}{20}$

(1) $1\frac{3}{5} * 6 = ?$

$1\frac{3}{5} * 6 =$ _____

(2) $4\frac{1}{2} * 1\frac{5}{6} = ?$

$4\frac{1}{2} * 1\frac{5}{6} =$ _____

Solve Problems 3 and 4 using the method of your choice.

(3) What is the area of a table that is $1\frac{1}{4}$ m long and $2\frac{1}{3}$ m wide? Write a number model with a letter for the unknown. Then solve. Show your work.

Number model: _____

Answer: The area of the table is _____ m^2.

(4) Write a number story that can be solved by multiplying $2\frac{3}{4}$ and $\frac{1}{2}$. Then solve the problem. Show your work on the back of this page.

Number story: _____

_____

_____

Answer: _____

Practice

(5) $\frac{11}{12} - \frac{3}{4} =$ _____

(6) $\frac{7}{8} - \frac{1}{6} =$ _____

Solving More Area Problems

Home Link 7-3

NAME DATE TIME

Solve. Show your work. Write a number model to summarize each solution.

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(1) The cover of Martina's book measures $7\frac{1}{4}$ inches by 9 inches. What is the area of the book cover?

Area: _____ Number model: _____

(2) The hallway floor in Ryan's school is covered with square tiles that are $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. Ryan counted and found that the hallway is 15 tiles wide and 60 tiles long.

a. How many tiles cover the hallway floor? _____

b. What is the area of the hallway floor?

Area: _____ Number model: _____

(3) An artist made a stained-glass window that is $3\frac{1}{2}$ feet by $2\frac{3}{4}$ feet.

a. What is the area of the window?

Area: _____ Number model: _____

b. The artist's design used squares of colored glass that measure $\frac{1}{4}$ foot by $\frac{1}{4}$ foot. How many colored squares did the artist use?

Answer: _____ Number model: _____

Practice

(4) $3\frac{1}{8} + 4\frac{2}{3} =$ _____

(5) $2\frac{1}{6} + 1\frac{5}{18} =$ _____

Solving Fraction Division Problems

Home Link 7-4

NAME DATE TIME

SRB 210

Using Common Denominators to Divide

One way to divide fractions is to use common denominators. This method can be used to divide whole numbers by fractions and fractions by whole numbers.

Example:
$\frac{1}{3} \div 4 = \frac{1}{3} \div \frac{12}{3}$

Step 1 Rename the dividend and divisor as fractions with a common denominator.

Step 2 Divide the numerators. $1 \div 12 = \frac{1}{12}$

Solve Problems 1–4. Show your work. Use multiplication to check your answer.

1. $5 \div \frac{1}{3} = ?$

Answer: _____

Check: _____

2. $4 \div \frac{1}{8} = ?$

Answer: _____

Check: _____

3. $\frac{1}{6} \div 4 = ?$

Answer: _____

Check: _____

4. $\frac{1}{5} \div 6 = ?$

Answer: _____

Check: _____

5. Write a number story to match Problem 2.

_____

_____

_____

Practice

6. $4\frac{1}{2} - 1\frac{3}{4} =$ _____

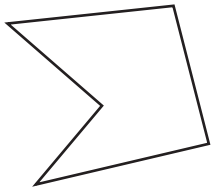
7. $2\frac{7}{8} - 1\frac{1}{3} =$ _____

Using a Hierarchy

Home Link 7-5

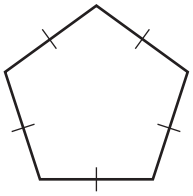
NAME DATE TIME

A *pentagon* is a shape with 5 sides. The shape below is a pentagon.



An *equilateral pentagon* is a pentagon with 5 sides that are all the same length. The shape below is an equilateral pentagon.

SRB 264–265



Consider the pentagon hierarchy below. Use it to answer the questions.

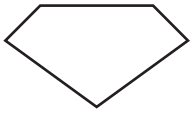
Pentagons

↓

Equilateral pentagons

↓

Equilateral pentagons with at least one right angle



(1) Answer Parts a–c to classify this shape on the hierarchy.

a. Can this shape go in the top category, Pentagons? How do you know?

_____

b. Can this shape go in the first subcategory, Equilateral pentagons? How do you know?

_____

_____

c. Can this shape go into the second subcategory, Equilateral pentagons with at least one right angle? How do you know?

_____

_____

(2) Describe how you would classify the shape below on the hierarchy. Start at the top and describe how you know if the shape fits in each category and subcategory.

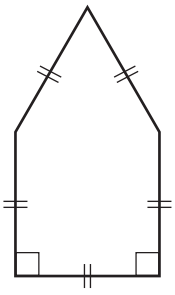
_____

_____

_____

_____

_____

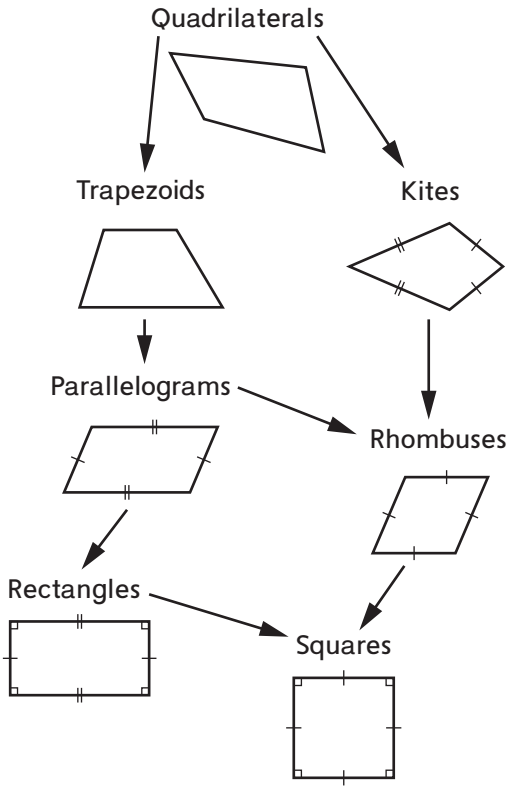


The Quadrilateral Hierarchy

Home Link 7-6

NAME DATE TIME

The quadrilateral hierarchy you used in class is below. Use it to answer the questions. SRB 264-265 268-269



(1) Fill in the blanks.

a. All *trapezoids* are *quadrilaterals*, but not all *quadrilaterals* are *trapezoids*.

b. All _____ are _____, but not all _____ are _____.

c. All _____ are _____, but not all _____ are _____.

(2) **a.** All parallelograms have two pairs of parallel sides. Does this mean that all rectangles have two pairs of parallel sides? Explain how you can tell by looking at the hierarchy.

_____

_____

b. All trapezoids have at least one pair of parallel sides. Which other shapes have at least one pair of parallel sides? Explain how you can tell by looking at the hierarchy.

_____

_____

_____

Practice

(3) $\frac{1}{4} \div 8 =$ _____

(4) $\frac{1}{10} \div 3 =$ _____

(5) $\frac{1}{6} \div 2 =$ _____

(6) $\frac{1}{5} \div 12 =$ _____

Property Pandemonium

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NAME DATE TIME

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(1) Imagine that you are playing *Property Pandemonium*. You already chose all of your cards and filled in the Property and Quadrilateral columns. Complete the Drawing, Additional Names, and Points columns for each round. Then find your total score.

Round	Property	Quadrilateral	Drawing	Additional Names	Points
1	2 pairs of parallel sides	rhombus			
2	2 pairs of adjacent sides equal in length	parallelogram			
3	4 right angles	kite			
				TOTAL	

Practice

Divide.

(2) $9 \div \frac{1}{3} =$ _____

(3) $4 \div \frac{1}{5} =$ _____

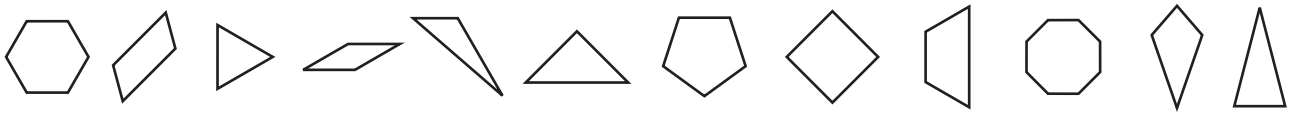
(4) $2 \div \frac{1}{10} =$ _____

(5) $12 \div \frac{1}{4} =$ _____

Classifying Polygons

Home Link 7-8

NAME DATE TIME



(1) Draw the 12 shapes above in the correct categories on the hierarchy.

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Polygons

At least 1 right angle

At least 1 obtuse angle

Exactly 4 right angles

All obtuse angles

(2) Explain how you decided where to place the hexagon.

Practice

Solve.

(3) $6.8 * 10^3 =$ _____

(4) $12.7 \div 10^4 =$ _____

(5) $0.4 *$ _____ $= 4{,}000$

(6) $64.3 \div$ _____ $= 0.643$

Plotting and Interpreting Line-Plot Data

Home Link 7-9

NAME DATE TIME

Marisela and her class are finding their finger-stretch measurements. The finger stretch is measured from the tip of the pinkie to the tip of the index finger with an outstretched hand. Below are the measurements for Marisela and her classmates to the nearest $\frac{1}{2}$ inch.

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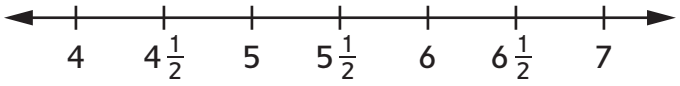
4	$6\frac{1}{2}$	6
$5\frac{1}{2}$	5	5
$4\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{2}$
$5\frac{1}{2}$	$5\frac{1}{2}$	6
$5\frac{1}{2}$	5	5
$6\frac{1}{2}$	$5\frac{1}{2}$	6
6	7	$6\frac{1}{2}$
$5\frac{1}{2}$		



Finger-Stretch Length (in.)

1. Plot the data on the line plot.

2. Marisela wants to find the total length of all the $6\frac{1}{2}$-inch finger stretches. Write a number model using *addition* to help her find the total, then solve.

   Number model: _____

   Answer: _____ inches

3. Now Marisela wants to use *multiplication* to find the total length of all the $5\frac{1}{2}$-inch finger stretches. Write a number model. Then solve.

   Number model: _____

   Answer: _____ inches

4. Find the total length of all the finger stretches in Marisela's class.

   Answer: _____ inches

Practice

5. $4\frac{1}{5} * \frac{1}{3} =$ _____

6. $2\frac{5}{6} * 7\frac{1}{4} =$ _____

Identifying Patterns

Home Link 7-10

NAME DATE TIME

(1) **a.** Each column in the table below has a rule at the top. Use the rules to fill in the columns.

in (x) Rule: $+2$	out (y) Rule: -2
0	10

b. What rule relates the numbers in the *in* column to the numbers in the *out* column? *Hint:* What happens when you add the numbers in each row?

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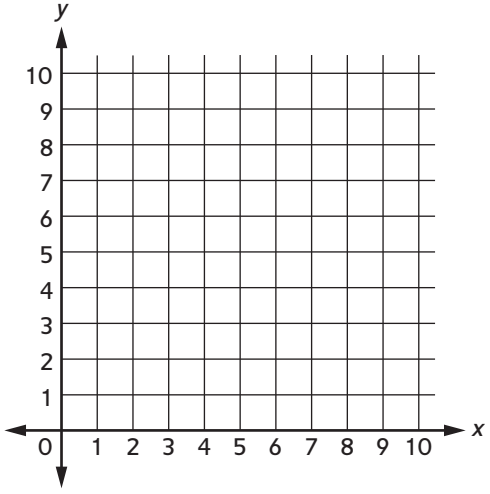
c. Write the numbers from the table as ordered pairs. Graph the ordered pairs on the grid. Draw a line to connect the points.

Ordered pairs:

(0, 10)



(2) How does your graph in Problem 1c show the $+2$ rule from the *in* column?

Practice

The digits in each product or quotient are given. Use an estimate to place the decimal point. Write a number sentence to show how you estimated.

(3) $42.96 \div 1.2 = 3\ 5\ 8$

Number sentence: _____

(4) $19.2 * 8.8 = 1\ 6\ 8\ 9\ 6$

Number sentence: _____

Working with Rules, Tables, and Graphs

Home Link 7-11

NAME DATE TIME

Use the rule to complete the table. Write ordered pairs to represent the data. Then graph the ordered pairs and answer the questions.

SRB 55-56 275

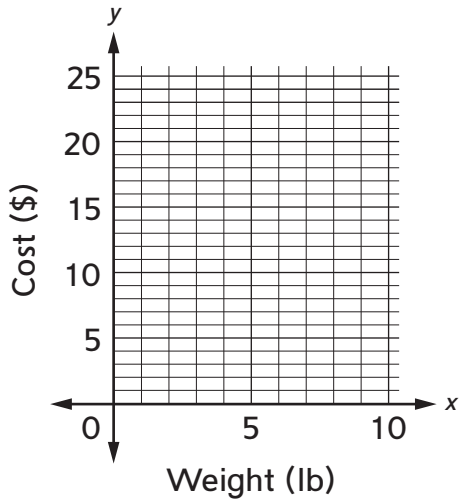
(1) Cherry tomatoes cost $2.50 per pound.

Rule: Cost = $2.50 * weight in pounds

a.

Weight (pounds) (x)	Cost (dollars) (y)
1	
3	
	15.00
10	

c.



b. Ordered pairs:

_____ _____ _____ _____

d. Plot a point to show the cost of 8 pounds of cherry tomatoes. What is the cost?

_____

e. Julius has $12.00. Does he have enough money to buy 5 pounds of cherry tomatoes? Explain.

_____

_____

f. Would you use the graph, the table, or the rule to find out how much 50 pounds of cherry tomatoes would cost? Explain.

_____

_____

Practice

Multiply. Show your work on the back of this page.

(2) 29.5 * 62.3 = _____ (3) 4.1 * 250.8 = _____

Interpreting Tables and Graphs

Home Link 7-12

NAME DATE TIME

Ami runs 6 yards per second. Derek runs 5 yards per second. Ami challenged Derek to an 80-yard race. She told him he could have a 12-yard head start.

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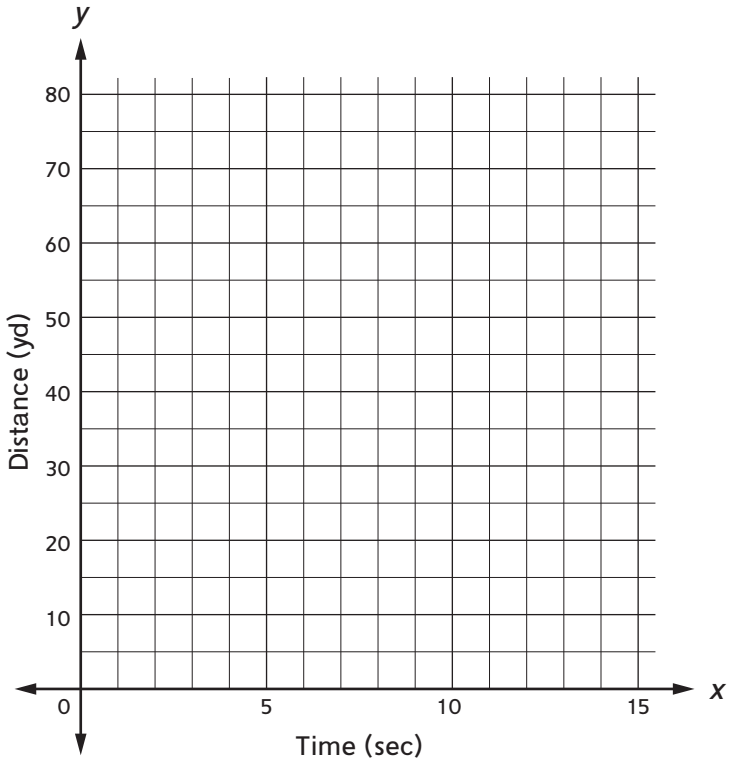
- Complete the tables to show the distances Ami and Derek are from the starting line during the first 5 seconds of the race.
- Write 3 ordered pairs each for Ami and Derek.
- Graph the ordered pairs you wrote and connect them with a line. Extend each line to the 80-yard mark to find out who wins. Label each line.

Ami	
Time in Seconds (x)	Distance in Yards (y)
0	0
1	6
2	
3	
4	24
5	

Derek	
Time in Seconds (x)	Distance in Yards (y)
0	12
1	17
2	
3	27
4	
5	



Ami _____ _____ _____

Derek _____ _____ _____

(1) Who wins the race? How do you know?

_____

_____

Practice

Write an equivalent problem with a whole-number divisor. Then solve.

(2) 68 ÷ 0.5 = _____

680 ÷ 5 = 136

Equivalent problem:

(3) 7.92 ÷ 0.22 = _____

_____

Equivalent problem:

Analyzing Patterns and Relationships

Home Link 7-13

NAME DATE TIME

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(1) Use the given rules to complete each column of the table.

(2) Find a rule that relates the *in* numbers to the corresponding *out* numbers.

Rule: _____

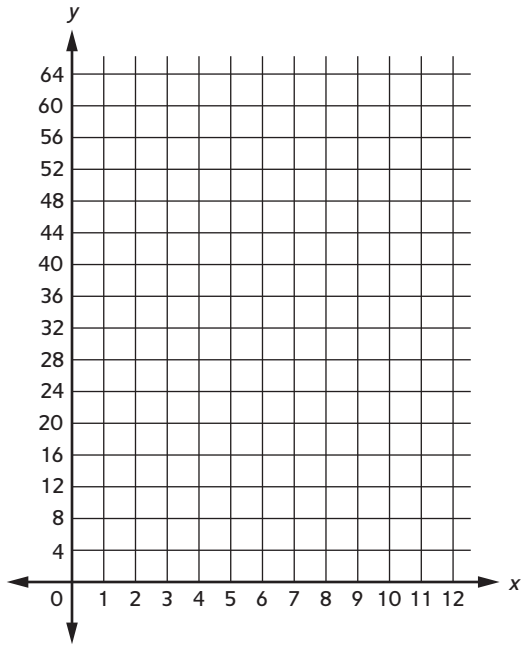
(3) Write the numbers in the table as ordered pairs.

_____ _____ _____

_____ _____ _____

in (x) Rule: + 1	out (y) Rule: + 6
0	5
1	11

(4) Graph the ordered pairs on the grid.



(5) Use the graph to answer the questions below. Use the formula to check your answers.

a. When the *in* number is 8, what is the *out* number? _____

b. When y is 64, about how much is x? About _____

Practice

Solve. Show your work on the back of this page.

(6) $3\frac{1}{5} * 2\frac{2}{3} =$ _____ (7) $8\frac{1}{2} * 12 =$ _____ (8) $9 * 5\frac{1}{7} =$ _____