SCSS Advanced Lesson Planning

Grade Level: 6th Grade   Subject: Mathematics

Day	Standard	Activity/Assignment	Instructions	Additional Resources/Information *Optional*
11	6.NS.C	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 4 problems of your choice on each page (lesson number can be found in upper lefthand corner): 1-1, 1-2, 1-3 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
12	6.EE.C	*Go Math* Differentiated Instruction Reteach Lesson	On the following Reteach Lesson, complete #1-3 12-3 Check out the worked examples on each page for further guidance.	
13	6.G.A	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 2 problems of your choice on each page (lesson number can be found in upper lefthand corner): 13-4, 14-2, 15-2 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
14	6.SP.A	*Go Math* Differentiated Instruction Reteach Lesson	On the following Reteach Lesson, complete #1-3 16-1 Check out the worked examples on each page for further guidance.	
15	6.SP.B	*Go Math* Differentiated Instruction Reteach Lesson	Complete the assigned number of problems on each of the following Reteach lessons (lesson number can be found in upper lefthand corner): 16-3, 16-4,16-5 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
16	6.NS.A	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 3 problems of your choice on each page (lesson number can be found in upper righthand corner): 4-1, 4-2, 4-3 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
17	6.NS.B	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 3 problems of your choice on each page (lesson number can be found in upper righthand corner): 2-1, 2-2, 5-5 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
18	6.EE.A	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 2 problems of your choice on each page (lesson number can be found in upper righthand corner): 9-1, 9-2, 9-3, 10-1 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.
19	6.EE.B	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 3 problems of your choice on each page (lesson number can be found in upper righthand corner): 11-1, 11-2, 11-3 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.

SCSS Advanced Lesson Planning

20	6.RP.A	*Go Math* Differentiated Instruction Reteach Lesson	On each of the following Reteach Lessons, complete 3 problems of your choice on each page (lesson number can be found in upper righthand corner): 6-3, 7-1, 7-2 Check out the worked examples on each page for further guidance.	If you would like additional practice, you may complete all of the problems.

Name ______________________ Date ____________ Class ____________ Day 11

LESSON 1-1

Identifying Integers and Their Opposites

Reteach

Positive numbers are greater than 0. Use a positive number to represent a gain or increase. Include the positive sign (+).

an increase of 10 points	+10
a flower growth of 2 inches	+2
a gain of 15 yards in football	+15

Negative numbers are less than 0. Use a negative number to represent a loss or decrease. Also use a negative number to represent a value below or less than a certain value. Include the negative sign (–).

a bank withdrawal of $30	–30
a decrease of 9 points	–9
2° below zero	–2

–6 –5 –4 –3 –2 –1 0 1 2 3 4 5 6

negative numbers positive numbers

Opposites are the same distance from zero on the number line, but in different directions. –3 and 3 are opposites because each number is 3 units from zero on a number line.

Integers are the set of all whole numbers, zero, and their opposites.

Name a positive or negative number to represent each situation.

1. an increase of 3 points ____________
2. spending $10 ____________
3. earning $25 ____________
4. a loss of 5 yards ____________

Write each integer and its opposite. Then graph them on the number line.

–10 –9 –8 –7 –6 –5 –4 –3 –2 –1 0 1 2 3 4 5 6 7 8 9 10

5. –1 ________
6. 9 ________
7. 6 ________
8. –5 ________

Day 11

Name ______________________ Date ______________ Class ______________

LESSON 1-2

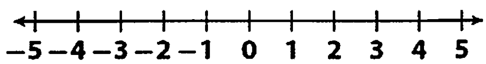
Comparing and Ordering Integers

Reteach

You can use a number line to compare integers.

As you move *right* on a number line, the values of the integers *increase*.
As you move *left* on a number line, the values of the integers *decrease*.

Compare –4 and 2.

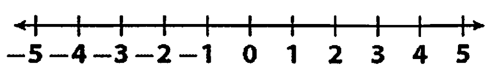


–4 is to the left of 2, so –4 < 2.

Use the number line above to compare the integers. Write < or >.

1. 1 ◯ –4
2. –5 ◯ –2
3. –3 ◯ 2
4. –1 ◯ –4
5. 5 ◯ 0
6. –2 ◯ 3

You can also use a number line to order integers.
Order –3, 4, and –1 from least to greatest.



List the numbers in the order in which they appear from left to right.

The integers in order from least to greatest are –3, –1, 4.

Order the integers from least to greatest.

7. –2, –5, –1 ______________
8. 0, –5, 5 ______________
9. –5, 2, –3 ______________
10. 3, –1, –4 ______________
11. 3, –5, 0 ______________
12. –2, –4, 1 ______________

Name ____________________ Date ______________ Class ______________ Day 11

LESSON 1-3

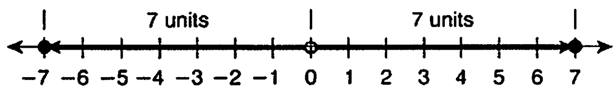
Absolute Value

Reteach

The absolute value of any number is its distance from 0 on the number line.

Since distance is always positive or 0, absolute value is always positive or 0.

Find the absolute value of –7 and 7.



$|-7| = 7$ $|7| = 7$

Match. You can use the letters more than once.

1. absolute value of 15 ____
2. negative integer ____
3. opposite of –7 ____
4. opposite of 7 ____
5. $|-15|$ ____

a. –7

b. 7

c. 15

d. –15

Find each absolute value.

6. $|-3|$ ______________
7. $|5|$ ______________
8. $|-7|$ ______________
9. $|6|$ ______________
10. $|0|$ ______________
11. $|-2|$ ______________
12. $|-10|$ ______________
13. $\left|-\frac{3}{4}\right|$ ______________
14. $|0.8|$ ______________

Answer the question.

15. Abby has been absent from class. How would you explain to her what absolute value is? Use the number line and an example in your explanation.

____

____

Name ______________________ Date ______________ Class______ Day 12

LESSON 12-3

Writing Equations from Tables

Reteach

The relationship between two variables in which one quantity depends on the other can be modeled by an equation. The equation expresses the dependent variable y in terms of the independent variable x.

x	0	1	2	3	4	5	6	7
y	4	5	6	7	8	9	10	?

To write an equation from a table of values, first compare the x- and y-values to find a pattern. In each, the <u>y</u>-value <u>is</u> <u>4 more than</u> the <u>x</u>-value.

Then use the pattern to write an equation expressing y in terms of x.
$y = x + 4$

You can use the equation to find the missing value in the table. To find y when $x = 7$, substitute 7 in for x in the equation.

$y = x + 4$
$y = 7 + 4$
$y = 11$
So, y is **11** when x is 7.

Write an equation to express *y* in terms of *x*. Use your equation to find the missing value of *y*.

1.

x	1	2	3	4	5	6
y	3	6	9	12	15	?

____

2.

x	18	17	16	15	14	13
y	15	14	13	?	11	10

____

To solve a real-world problem, use a table of values and an equation.

When Todd is 8, Jane is 1. When Todd is 10, Jane will be 3. When Todd is 16, Jane will be 9. What is Jane's age when Todd is 45?

Todd, *x*	8	10	16	45
Jane, *y*	1	3	9	?

Jane is 7 years younger than Todd.
So $y = x - 7$. When $x = 45$, $y = 45 - 7$. So, $y = 38$.

Solve.

3. When a rectangle is 3 inches wide its length is 6 inches. When it is 4 inches wide its length will be 8 inches. When it is is 9 inches wide its length will be 18 inches. Write and solve an equation to complete the table.

Width, *x*	3	4	9	20
Length, *y*	6			

____

When the rectangle is 20 inches wide, its length is ________________.

Name ______________________ Date ______________ Class______________ Day 13

LESSON 13-4

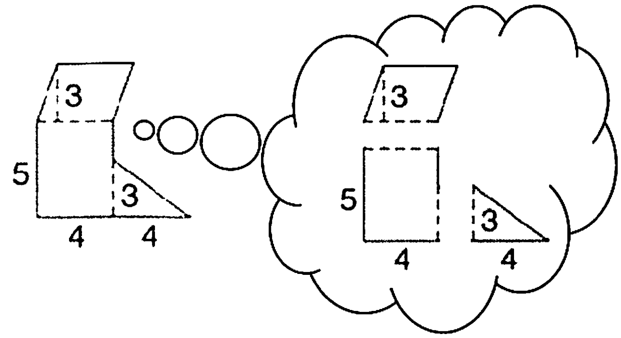
Area of Polygons

Reteach

Sometimes you can use area formulas you know to help you find the area of more complex figures.

You can break a polygon into shapes that you know. Then use those shapes to find the area.

The figure at right is made up of a triangle, a parallelogram, and a rectangle.



Triangle

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

$= \frac{1}{2}(3 \times 4)$

$= 6$ square units

Parallelogram

$A = bh$

$= 3 \times 4$

$= 12$ square units

Rectangle

$A = lw$

$= 4 \times 5$

$= 20$ square units

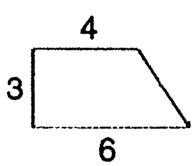
Finally, find the sum of all three areas.

$6 + 12 + 20 = 38$

The area of the whole figure is 38 square units.

Find the area of each figure.

1.



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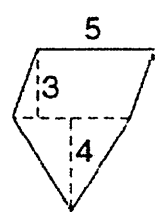
2.



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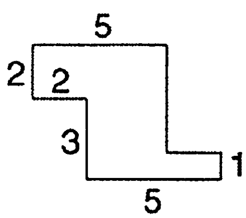
3.



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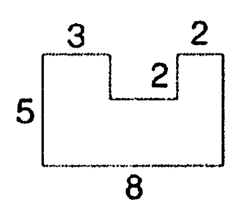
4.



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Name ______________________ Date ______________ Class ______________ Day 13

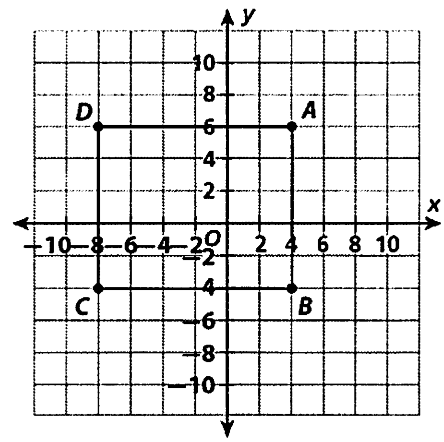
LESSON 14-2

Polygons in the Coordinate Plane

Reteach

Polygons are formed from three or more points, called *vertices*, that are connected by line segments and that enclose an area.

If the lengths of the sides are known, the area and perimeter of a polygon can be found. They can also be found if the coordinates of the vertices are known.



Find the Perimeter

First, identify the coordinates of the points that form the vertices of the polygon.

A: (4, 6); *B*: (4, –4); *C*: (–8, –4); *D*: (–8, 6)

Next, find the lengths of the sides.

AB = 10 units

BC = 12 units

CD = 10 units

DA = 12 units

Finally, add the lengths of the sides.

10 + 12 + 10 + 12 = 44

The perimeter of the polygon is 44 units.

Find the Area

First, identify the polygon. The figure is a rectangle, so its area is the product of its length and width.

Next, use the coordinates of the points to find the length and width.

AB = 10 units

BC = 12 units

Finally, multiply the length and width.

10 × 12 = 120

The area of the polygon is 120 square units.

In this case, the area can also be found by counting the squares enclosed by the polygon. There are 30 squares.

How much area is represented by each square? 2 × 2, or 4 square units.

The area is 30 cubes × 4, or 120 square units.

Find the perimeter and area of the polygon enclosed by the points.

1. (8, 6), (2, 6), (8, –5), and (2, –5)

   Side lengths: ______________________

   Perimeter: ______________________

   Area: ______________________

2. (0, 0), (0, 7), (7, 7), and (7, 0)

   Side lengths: ______________________

   Perimeter: ______________________

   Area: ______________________

Name ______________________ Date ______________ Class______________ Day 13

LESSON 15-2

Volume of Rectangular Prisms

Reteach

The volume of a rectangular prism is found by multiplying its length, width, and height. In some cases, instead of the length and width, the area of one of the bases of the prism will be known.

Length, width, height, and volume

A rectangular prism has dimensions of 2.5 meters, 4.3 meters, and 5.1 meters. What is its volume to two significant figures?

Solution

$V = l \times w \times h$

$V = 2.5 \times 4.3 \times 5.1$

$= 54.825$

To two significant figures, the volume of the prism is 55 cubic meters.

Base area, height, and volume

A rectangular prism has a base area of $\frac{2}{3}$ of a square foot. Its height is $\frac{1}{2}$ foot. What is its volume?

Solution

$V = A_{base} \times h$

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

The volume of the prism is $\frac{1}{3}$ cubic foot.

Find the volume of a rectangular prism with the given dimensions.

1. length: $\frac{2}{3}$ yd; width: $\frac{5}{6}$ yd; height: $\frac{4}{5}$ yd ______________

2. base area: 12.5 m^2; height: 1.2 m ______________

The density of a metal in a sample is the mass of the sample divided by the volume of the sample. The units are mass per unit volume.

Problem The mass of a sample of metal is 2,800 grams. The sample is in the shape of a rectangular prism that measures 5 centimeters by 7 centimeters by 8 centimeters. What is the volume of the sample?

$V = 5 \times 7 \times 8$

$= 280 \text{ cm}^3$

What is the density of the sample?

$2{,}800 \div 280 = 10 \text{ g/cm}^3$

3. A sample of metal has a mass of 3,600 grams. The sample is in the shape of a rectangular prism that has dimensions of 2 centimeters by 3 centimeters by 4 centimeters. What is the density of the sample?

____

Name ______________________ Date ____________ Class ______ Day 14

LESSON 16-1

Measures of Center

Reteach

When calculating the mean, you can use *compatible numbers* to find the sum of the data values. Compatible numbers make calculations easier. For example, adding multiples of 5 or 10 is easier than adding all of the individual data values.

A group of students are asked how many hours they spend watching television during one week. Their responses are: 15, 7, 12, 8, 4, 13, 11. What is the mean?

4 + 11 = 15

15 7 12 8 4 13 11

Group numbers that have sums which are multiples of 5 or 10.

12 + 8 = 20

7 + 13 = 20

15 + 20 + 20 + 15 = 70

Find the sum of the numbers.

$\frac{\mathbf{70}}{\mathbf{7}} = \mathbf{10}$

Divide the sum by the number of data values.

The mean is 10 hours.

Use compatible numbers to find the mean.

1. The costs (in dollars) of items on a lunch menu are 9, 14, 11, 6, 16, 10.

   Mean: ______________________

2. The numbers of students in Mr. Silva's math classes are 19, 18, 22, 24, 20, 18, 26.

   Mean: ______________________

3. In the television viewing data above, is there more than one way to pair the data values to form compatible numbers? Explain.

   ____

   ____

Name ______________________ Date ____________ Class ____________ Day 14

LESSON 16-1

Measures of Center

Reteach

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A group of students are asked how many hours they spend watching television during one week. Their responses are: 15, 7, 12, 8, 4, 13, 11. What is the mean?

4 + 11 = 15

15 7 12 8 4 13 11

Group numbers that have sums which are multiples of 5 or 10.

12 + 8 = 20

7 + 13 = 20

15 + 20 + 20 + 15 = 70

Find the sum of the numbers.

$$\frac{\mathbf{70}}{\mathbf{7}} = \mathbf{10}$$

Divide the sum by the number of data values.

The mean is 10 hours.

Use compatible numbers to find the mean.

1. The costs (in dollars) of items on a lunch menu are 9, 14, 11, 6, 16, 10.

   Mean: ______________________

2. The numbers of students in Mr. Silva's math classes are 19, 18, 22, 24, 20, 18, 26.

   Mean: ______________________

3. In the television viewing data above, is there more than one way to pair the data values to form compatible numbers? Explain.

   ____

   ____

Name ______________________ Date ______________ Class______________ Day 15

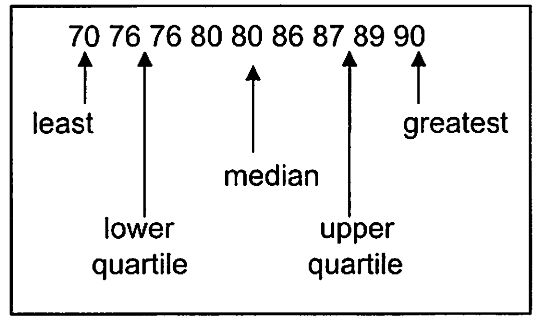
LESSON 16-3

Box Plots

Reteach

A **box plot** gives you a visual display of how data are distributed.

Here are the scores Ed received on 9 quizzes: 76, 80, 89, 90, 70, 86, 87, 76, 80.



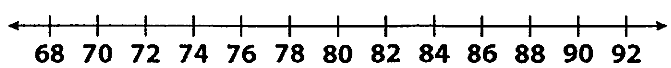
Step 1: List the scores in order from least to greatest.

Step 2: Identify the least and greatest values.

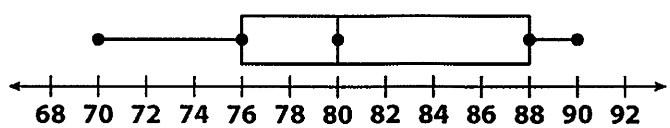
Step 3: Identify the median.
If there is an odd number of values, the median is the middle value.

Step 4: Identify the lower quartile and upper quartile. If there is an even number of values above or below the median, the lower or upper quartile is the average of the two middle values.

Step 5: Draw a number line that includes the values in the given data.



Step 6: Place dots above the number lines at each value you identified in Steps 2–4. Draw a box starting at the lower quartile and ending at the upper quartile. Mark the median, too.



Use the data at the right for Exercises 1–5. Complete each statement.

20	6	15
10	14	15
8	10	12

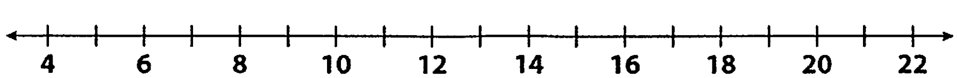
1. List the data in order: ______________________________

2. Least value: ______________ Greatest value: ______________

3. Median:______________

4. Lower quartile:______________ Upper quartile:______________

5. Draw a box plot for the data.



Name ______________________ Date ______________ Class Day 15

LESSON 16-4

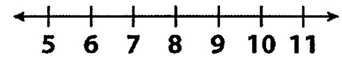
Dot Plots and Data Distribution

Reteach

A **dot plot** gives you a visual display of how data are distributed.

Example: Here are the scores Yolanda received on math quizzes: 6, 10, 9, 9, 10, 8, 7, 7, and 10. Make a dot plot for Yolanda's quiz scores.

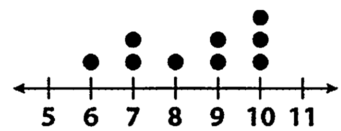
Step 1: Draw a number line.



Yolanda's Math Quiz Scores

Step 2: Write the title below the number line.

Step 3: For each number in the data set, put a dot above that number on the number line.



Yolanda's Math Quiz Scores

Describe the dot plot by identifying the **range**, the **mean**, and the **median**.

Step 4: Identify the range. 10 − 6 = 4

Step 5: Find the mean. 76 ÷ 9 = 8.4

Step 6: Find the median. 9

Range: Greatest value − least value

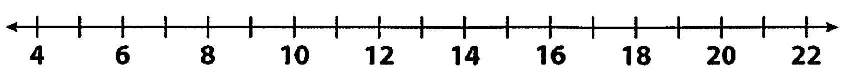
Mean: $\frac{\text{Sum of data values}}{\text{Number of data values}}$

Median: Middle value

Use the data set at the right to complete Exercises 1–4.

Game Scores			
12	6	15	10
14	15	8	10
12	21	15	8

1. Draw a dot plot for the data.



Game Scores

2. Find the range. ______________

3. Find the mean. ______________

4. Find the median. ______________

Name ______________________ Date ______________ Class ______________ Day 15

LESSON 16-5

Histograms

Practice and Problem Solving: C

Use the data set and the description below to complete Exercises 1–5.

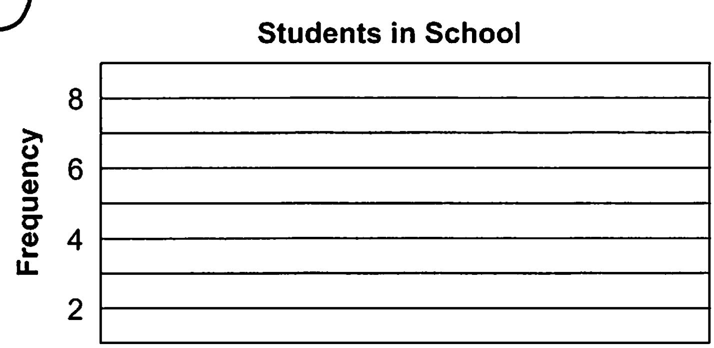
The data set shows a list of the number of students at school each day during the month of January.

Students in School				
281	**260**	**279**	**253**	**275**
278	**255**	**280**	**220**	**266**
287	**252**	**279**	**282**	**293**
277	**288**	**254**	**256**	**285**

1. Complete the frequency table. Use an interval of 20.

Students in School	
Number	**Frequency**
220–239	

2. Complete the histogram.



____

3. Where can you find the range, the median, and the mean of the data.

____

4. Where can you find intervals and frequencies?

____

5. Besides the histogram, what are some other ways you could display these data?

____

Name ______________________ Date ______________ Class ______ Day 16

LESSON 4-1

Applying GCF and LCM to Fraction Operations

Reteach

How to Multiply a Fraction by a Fraction

$\frac{2}{3} \cdot \frac{3}{8}$

$\frac{2}{3} \cdot \frac{3}{8} = \frac{6}{}$ Multiply numerators.

$\frac{2}{3} \cdot \frac{3}{8} = \frac{6}{24}$ Multiply denominators.

$\frac{6 \div 6}{24 \div 6} = \frac{1}{4}$ Divide by the greatest common factor (GCF).

The GCF of 6 and 24 is 6.

How to Add or Subtract Fractions

$\frac{5}{6} + \frac{11}{15}$

$\frac{25}{30} + \frac{22}{30}$ Rewrite over the least common multiple (LCM).

The least common multiple of 6 and 15 is 30.

$\frac{25}{30} + \frac{22}{30} = \frac{47}{30}$ Add the numerators.

$= 1\frac{17}{30}$ If the sum is an improper fraction, rewrite it as a mixed number.

Multiply. Use the greatest common factor.

1. $\frac{3}{4} \cdot \frac{7}{9}$ ____________

2. $\frac{2}{7} \cdot \frac{7}{9}$ ____________

3. $\frac{7}{11} \cdot \frac{22}{28}$ ____________

4. $8 \cdot \frac{3}{10}$ ____________

5. $\frac{4}{9} \cdot \frac{3}{4}$ ____________

6. $\frac{3}{7} \cdot \frac{2}{3}$ ____________

Add or subtract. Use the least common multiple.

7. $\frac{7}{9} + \frac{5}{12}$ ____________

8. $\frac{21}{24} - \frac{3}{8}$ ____________

9. $\frac{11}{15} + \frac{7}{12}$ ____________

Name ____________________ Date ____________ Class Day 16

LESSON 4-2

Dividing Fractions

Reteach

Two numbers are reciprocals if their product is 1.

$\frac{2}{3}$ and $\frac{3}{2}$ are reciprocals because $\frac{2}{3} \cdot \frac{3}{2} = \frac{6}{6} = 1$.

Dividing by a number is the same as multiplying by its reciprocal.

$\frac{1}{4} \div \frac{1}{2} = \frac{1}{2} \longrightarrow \frac{1}{4} \cdot \frac{2}{1} = \frac{1}{2}$

So, you can use reciprocals to divide by fractions.

Find $\frac{2}{3} \div \frac{1}{4}$.

First, rewrite the expression as a multiplication expression.

Use the reciprocal of the divisor: $\frac{1}{4} \cdot \frac{4}{1} = 1$.

$$\frac{2}{3} \div \frac{1}{4} = \frac{2}{3} \cdot \frac{4}{1} = \frac{8}{3} = 2\frac{2}{3}$$

Think: 6 thirds is 2, and 2 of the 8 thirds are left over.

Rewrite each division expression as a multiplication expression. Then find the value of the expression. Write each answer in simplest form.

1. $\frac{1}{4} \div \frac{1}{3}$ ____________
2. $\frac{1}{2} \div \frac{1}{4}$ ____________
3. $\frac{3}{8} \div \frac{1}{2}$ ____________
4. $\frac{1}{3} \div \frac{3}{4}$ ____________

Divide. Write each answer in simplest form.

5. $\frac{1}{5} \div \frac{1}{2}$ ____________
6. $\frac{1}{6} \div \frac{2}{3}$ ____________
7. $\frac{1}{8} \div \frac{2}{5}$ ____________
8. $\frac{1}{8} \div \frac{1}{2}$ ____________

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LESSON 4-3

Dividing Mixed Numbers

Reteach

Two numbers are **reciprocals** if their product is 1.

$\frac{7}{3}$ and $\frac{3}{7}$ are reciprocals because $\frac{7}{3} \times \frac{3}{7} = 1$.

Write a mixed number as an improper fraction to find its reciprocal.

$2\frac{3}{4}$ and $\frac{4}{11}$ are reciprocals because $2\frac{3}{4} = \frac{11}{4}$ and $\frac{11}{4} \times \frac{4}{11} = 1$.

To find $2\frac{3}{4} \div 1\frac{3}{4}$, first rewrite the mixed numbers as improper fractions.

$\frac{11}{4} \div \frac{7}{4}$

Next, rewrite the expression as a multiplication expression and replace the divisor with its reciprocal.

$\frac{11}{4} \times \frac{4}{7}$

Solve. Write your answer in simplest form.

$2\frac{3}{4} \div 1\frac{3}{4} = \frac{11}{4} \div \frac{7}{4} = \frac{11}{4} \times \frac{4}{7} = \frac{11}{7} = 1\frac{4}{7}$

Find the reciprocal.

1. $\frac{9}{14}$ ______________

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

3. $10\frac{2}{3}$ ______________

Complete the division. Write each answer in simplest form.

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

$= \frac{18}{5} \div \frac{\_\_}{4}$

$= \frac{\_\_}{5} \times \frac{\_\_}{9}$

____

5. $1\frac{1}{2} \div 1\frac{1}{4}$

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

$= \_\_ \times \_\_$

____

6. $\frac{5}{12} \div 1\frac{7}{8}$

$= \frac{\_\_}{12} \div \frac{\_\_}{8}$

$= \_\_ \times \_\_$

____

7. $3\frac{1}{8} \div \frac{1}{2}$

____

8. $1\frac{1}{6} \div 2\frac{2}{3}$

____

9. $2 \div 1\frac{1}{5}$

____

Name ______________________ Date ______________ Class ______________ Day 17

LESSON 2-1

Greatest Common Factor

Practice and Problem Solving: D

Write the factors. The first one is done for you.

1. 6
   1, 2, 3, and 6
2. 10
   ____
3. 18
   ____

Write the *greatest common factor* (GCF) of both numbers. First, write the factors. Then, find the *greatest* factor that is common to *both* numbers. The first one is done for you.

4. 12 and 18

   Factors of 12: **1, 2, 3, 4, 6, and 12**

   Factors of 18: **1, 2, 3, 6, 9, and 18**

   Compare the factors:

   1, 2, 3, 4, 6, and 12

   1, 2, 3, 6, 9, and 18

   Greatest common factor? 6

5. 6 and 20

   Factors of 6: ______________

   Factors of 20: ______________

   Compare the factors:

   ____

   ____

   Greatest common factor? ________

6. 25 and 80

   Factors of 25: ______________

   Factors of 80: ______________

   ____

   GCF: ________

7. 27 and 45

   Factors of 27: ______________

   Factors of 45: ______________

   ____

   GCF: ________

Write the product as the GCF of both numbers times a sum. Use the distributive principle. The first one is done for you.

8. 9 + 24

   GCF of 9 and 24: 3

   3 × (3 + 8)

9. 15 + 42

   GCF of 15 and 42: ________

   ____ × (____ + ____)

Solve using the GCF.

10. A gift shop wants to make gift baskets for its regular customers. There are 24 bottles of shampoo, 36 tubes of hand lotion, and 60 bars of soap. The same number of each item should be in each basket. What is the greatest number of baskets that can be made?

    ____

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LESSON 2-2

Least Common Multiple

Reteach

The smallest number that is a multiple of two or more numbers is called the least common multiple (LCM) of those numbers.

To find the least common multiple of 3, 6, and 8, list the multiples for each number and put a circle around the LCM in the three lists.

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24

Multiples of 6: 6, 12, 18, 24, 30, 36, 42

Multiples of 8: 8, 16, 24, 32, 40, 48, 56

So 24 is the LCM of 3, 6, and 8.

List the multiples of each number to help you find the least common multiple of each group.

1. 2 and 9

   Multiples of 2: ______________

   Multiples of 9: ______________

   LCM: ________

2. 4 and 6

   Multiples of 4: ______________

   Multiples of 6: ______________

   LCM: ________

3. 4 and 10

   Multiples of 4: ______________

   Multiples of 10: ______________

   LCM: ________

4. 2, 5, and 6

   Multiples of 2: ______________

   Multiples of 5: ______________

   Multiples of 6: ______________

   LCM: ________

5. 3, 4, and 9

   Multiples of 3: ______________

   Multiples of 4: ______________

   Multiples of 9: ______________

   LCM: ________

6. 8, 10, and 12

   Multiples of 8: ______________

   Multiples of 10: ______________

   Multiples of 12: ______________

   LCM: ________

7. Pads of paper come 4 to a box, pencils come 27 to a box, and erasers come 12 to a box. What is the least number of kits that can be made with paper, pencils, and erasers with no supplies left over?

   ____

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LESSON 5-5

Applying Operations with Rational Numbers

Reteach

When a word problem involves fractions or decimals, use these four steps to help you decide which operation to use.

Tanya has $13\frac{1}{2}$ feet of ribbon. To giftwrap boxes, she needs to cut it into $\frac{7}{8}$-foot lengths. How many lengths can Tanya cut?

Step 1	Read the problem carefully. What is asked for?	The number of lengths is asked for.
Step 2	Think of a simpler problem that includes only whole numbers.	Tanya has 12 feet of ribbon. She wants to cut it into 2-foot lengths. How many lengths can she cut?
Step 3	How would you solve the simpler problem?	Divide 12 by 2. Tanya can cut 6 lengths.
Step 4	Use the same reasoning with the original problem.	Divide $13\frac{1}{2}$ by $\frac{7}{8}$. Tanya can cut 15 lengths.

Tell whether you should multiply or divide. Then solve the problem.

1. Jan has \$37.50. Tickets to a concert cost \$5.25 each. How many tickets can Jan buy?

____

2. Jon has \$45.00. He plans to spend $\frac{4}{5}$ of his money on sports equipment. How much will he spend?

____

3. Ricki has 76.8 feet of cable. She plans to cut it into 7 pieces. How long will each piece be?

____

4. Roger has $2\frac{1}{2}$ cups of butter. A recipe for a loaf of bread requires $\frac{3}{4}$ cup of butter. How many loaves can Roger bake?

____

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LESSON 9-1

Exponents

Reteach

You can write a number in exponential form to show repeated multiplication. A number written in exponential form has a **base** and an **exponent**. The exponent tells you how many times a number, the base, is used as a factor.

8^4 ← exponent

↓

base

Write the expression in exponential form.

$(0.7) \times (0.7) \times (0.7) \times (0.7)$

0.7 is used as a factor 4 times.

$(0.7) \times (0.7) \times (0.7) \times (0.7) = (0.7)^4$

Write each expression in exponential form.

1. $\frac{1}{20} \times \frac{1}{20} \times \frac{1}{20} \times \frac{1}{20}$ ____________
2. 8×8 ____________
3. $7.5 \times 7.5 \times 7.5$ ____________
4. (0.4) ____________

You can find the value of expressions in exponential form.
Find the value.
5^6

Step 1 Write the expression as repeated multiplication.
$5 \times 5 \times 5 \times 5 \times 5 \times 5$

Step 2 Multiply.
$5 \times 5 \times 5 \times 5 \times 5 \times 5 = 15{,}625$

$5^6 = 15{,}625$

Simplify.

5. $\left(\frac{1}{2}\right)^3$ ____________
6. $(1.2)^5$ ____________
7. 3^6 ____________
8. $\left(\frac{4}{3}\right)^2$ ____________

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LESSON 9-2

Prime Factorization

Reteach

Factors of a product are the numbers that are multiplied to give that product.

A factor is also a whole number that divides the product with no remainder.

To find all of the factors of 32, make a list of multiplication facts.

1 • 32 = 32

2 • 16 = 32

4 • 8 = 32

The factors of 32 are 1, 2, 4, 8, 16, and 32.

Write multiplication facts to find the factors of each number.

1. 28 ______________________________

2. 15 ______________________________

3. 36 ______________________________

4. 29 ______________________________

A number written as the product of prime factors is called the **prime factorization** of the number.

To write the prime factorization of 32, first write it as the product of two numbers. Then, rewrite each factor as the product of two numbers until all of the factors are prime numbers.

32 = 2 • **16** (Write 32 as the product of 2 numbers.)

= 2 • **4** • **4** (Rewrite 16 as the product of 2 numbers.)

↓ ↓

= 2 • 2 • 2 • 2 • 2 (Rewrite the 4's as the product 2 prime numbers.)

So, the prime factorization of 32 is 2 • 2 • 2 • 2 • 2 or 2^5.

Find the prime factorization of each number.

5. 28 ____________

6. 45 ____________

7. 50 ____________

8. 72 ____________

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LESSON 9-3

Order of Operations

Reteach

A mathematical phrase that includes only numbers and operations is called a *numerical expression*.

$9 + 8 \times 3 \div 6$ is a numerical expression.

When you evaluate a numerical expression, you find its value.

You can use the order of operations to evaluate a numerical expression.

Order of operations:

1. Do all operations within *parentheses*.
2. Find the values of numbers with *exponents*.
3. *Multiply* and *divide* in order from left to right.
4. *Add* and *subtract* in order from left to right.

Evaluate the expression.

$60 \div (7 + 3) + 3^2$

$60 \div 10 + 3^2$	Do all operations within parentheses.
$60 \div 10 + 9$	Find the values of numbers with exponents.
$6 + 9$	Multiply and divide in order from left to right.
15	Add and subtract in order from left to right.

Simplify each numerical expression.

1. $7 \times (12 + 8) - 6$

   7 × ____________ − 6

   ____________ − 6

   ____

2. $10 \times (12 + 34) + 3$

   10 × ____________ + 3

   ____________ + 3

   ____

3. $10 + (6 \times 5) - 7$

   10 + ____________ − 7

   ____________ − 7

   ____

4. $2^3 + (10 - 4)$

   ____

5. $7 + 3 \times (8 + 5)$

   ____

6. $36 \div 4 + 11 \times 8$

   ____

7. $5^2 - (2 \times 8) + 9$

   ____

8. $3 \times (12 \div 4) - 2^2$

   ____

9. $(3^3 + 10) - 2$

   ____

Solve.

10. Write and evaluate your own numerical expression. Use parentheses, exponents, and at least two operations.

    ____

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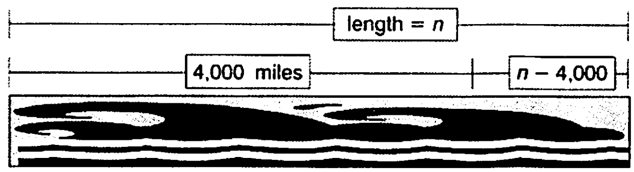
LESSON 10-1

Modeling and Writing Expressions

Reteach

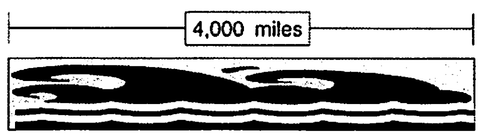
Write an expression that shows how much longer the Nile River is than the Amazon River.

NILE RIVER

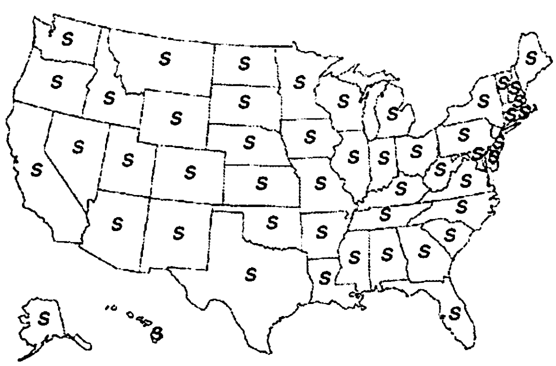


The expression is ***n* – 4,000**.

AMAZON RIVER



Each state gets the same number of senators. Write an expression for the number of senators there are in the United States Congress.



There are 50 states.

There are *s* senators from each state.

50*s*

The total number of senators is **50 times *s***.

Solve.

1. Why does the first problem above use subtraction?

____

2. Why does the second problem above use multiplication?

____

3. Jackson had *n* autographs in his autograph book. Yesterday he got 3 more autographs. Write an expression to show how many autographs are in his autograph book now.

____

4. Miranda earned $*c* for working 8 hours. Write an expression to show how much Miranda earned for each hour worked.

____

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LESSON 11-1

Writing Equations to Represent Situations

Reteach

An **equation** is a mathematical sentence that says that two quantities are equal.

Some equations contain variables. A **solution** for an equation is a value for a variable that makes the statement true.

You can write related facts using addition and subtraction.
$7 + 6 = 13$ $13 - 6 = 7$

You can write related facts using multiplication and division.
$3 \bullet 4 = 12$ $\frac{12}{4} = 3$

You can use related facts to find solutions for equations. If the related fact matches the value for the variable, then that value is a solution.

A. $x + 5 = 9$; $x = 3$

Think: $9 - 5 = x$
$4 = x$
$4 \neq 3$

3 is **not** a solution of $x + 5 = 9$.

B. $x - 7 = 5$; $x = 12$

Think: $5 + 7 = x$
$12 = x$
$12 = 12$

12 is a solution of $x - 7 = 5$.

C. $2x = 14$; $x = 9$

Think: $14 \div 2 = x$
$7 = x$
$7 \neq 9$

9 is **not** a solution of $2x = 14$.

D. $\frac{x}{5} = 3$; $x = 15$

Think: $3 \bullet 5 = x$
$15 = x$
$15 = 15$

15 is a solution of $x \div 5 = 3$.

Use related facts to determine whether the given value is a solution for each equation.

1. $x + 6 = 14$; $x = 8$ ______________
2. $\frac{s}{4} = 5$; $s = 24$ ______________
3. $g - 3 = 7$; $g = 11$ ______________
4. $3a = 18$; $a = 6$ ______________
5. $26 = y - 9$; $y = 35$ ______________
6. $b \bullet 5 = 20$; $b = 3$ ______________
7. $15 = \frac{v}{3}$; $v = 45$ ______________
8. $11 = p + 6$; $p = 5$ ______________
9. $6k = 78$; $k = 12$ ______________

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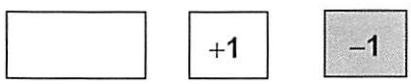
LESSON **11-2**

Addition and Subtraction Equations

Reteach

To solve an equation, you need to get the variable alone on one side of the equal sign.

You can use tiles to help you solve subtraction equations.



Variable add 1 subtract 1

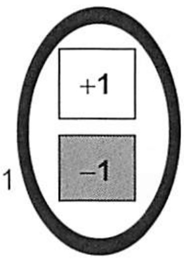
Addition undoes subtraction, so you can use addition to solve subtraction equations.

One positive tile and one negative tile make a **zero pair**.

Zero pair: $+1 + (-1) = 0$

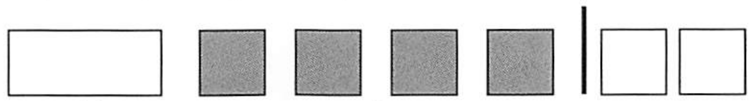
add 1

subtract 1



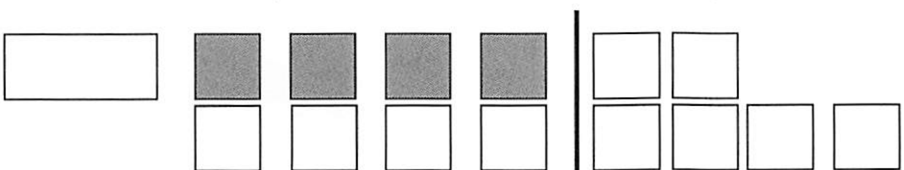
make zero

To solve $x - 4 = 2$, first use tiles to model the equation.



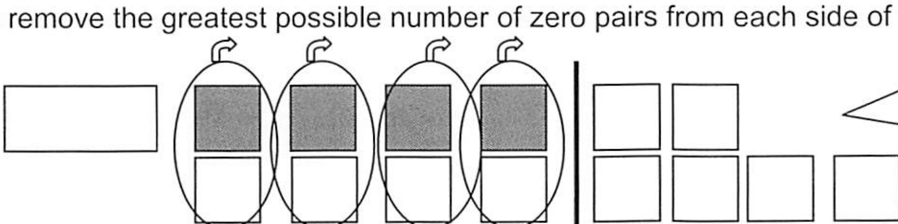
$x \quad - \quad 4 \quad = \quad 2$

To get the variable alone, you have to add positive tiles. Remember to add the same number of positive tiles to each side of the equation.



$x \quad - \quad 4 \quad + \quad 4 \quad = \quad 2 \quad + \quad 4$

Then remove the greatest possible number of zero pairs from each side of the equal sign.



$x \quad = \quad 6$

The remaining tiles represent the solution. $x = 6$

Use tiles to solve each equation.

1. $x - 5 = 3$

   $x =$ ____

2. $x - 2 = 7$

   $x =$ ____

3. $x - 1 = 4$

   $x =$ ____

4. $x - 8 = 1$

   $x =$ ____

5. $x - 3 = 3$

   $x =$ ____

6. $x - 6 = 2$

   $x =$ ____

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Day 19

LESSON 11-3

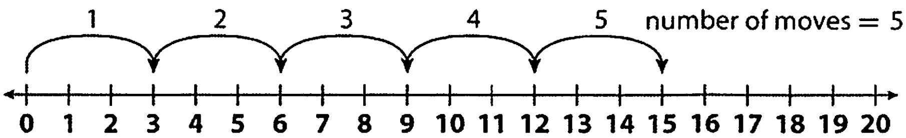
Multiplication and Division Equations

Reteach

Number lines can be used to solve multiplication and division equations.

Solve: $3n = 15$

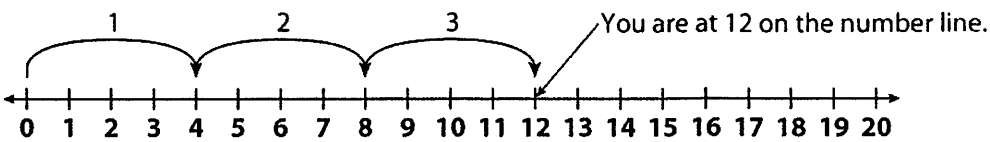
How many moves of 3 does it take to get to 15?



$n = 5$ Check: $3 \bullet 5 = 15$✓

Solve: $\frac{n}{3} = 4$

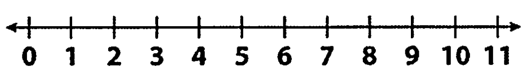
If you make 3 moves of 4, where are you on the number line?



$n = 12$ Check: $12 \div 3 = 4$✓

Show the moves you can use to solve each equation. Then give the solution to the equation and check your work.

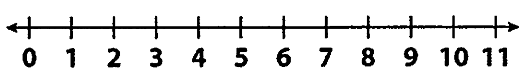
1. $3n = 9$



Solution: $n =$ ____

Show your check:

2. $\frac{n}{2} = 4$



Solution: $n =$ ____

Show your check:

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LESSON 6-3

Using Ratios and Rates to Solve Problems

Reteach

You can write a ratio and make a list of equivalent ratios to compare ratios.

Find out who uses more detergent.

Terri's recipe for soap bubble liquid uses 1 cup of dishwashing detergent to 4 cups of water.

Torri's recipe for soap bubble liquid uses 1 cup of dishwashing detergent to 12 cups of water (plus some glycerin drops).

Terri's ratio of detergent to water: 1 to 4 or $\frac{1}{4}$

Torri's ratio of detergent to water: 1 to 12 or $\frac{1}{12}$

List of fractions equivalent to $\frac{1}{4}$: $\frac{1}{4}, \frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20} \ldots$

List of fractions equivalent to $\frac{1}{12}$: $\frac{1}{12}, \frac{2}{24}, \frac{3}{36}, \frac{4}{48}, \frac{5}{60} \ldots$

You can compare $\frac{3}{12}$ to $\frac{1}{12}$, $\frac{3}{12} > \frac{1}{12}$.

Terri uses much more detergent.

Use the list to compare the ratios. Circle ratios with the same denominator and compare.

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

____

____

2. $\frac{4}{5}$ and $\frac{3}{7}$

____

____

3. Jack's recipe for oatmeal uses 3 cups of oats to 5 cups of water. Evan's recipe uses 4 cups of oats to 6 cups of water. Thicker oatmeal has a greater ratio of oats to water. Compare the ratios of oats to water to see who makes the thicker oatmeal. Show your work.

____

____

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LESSON 7-1

Ratios, Rates, Tables, and Graphs

Reteach

A **ratio** shows a relationship between two quantities.

Ratios are **equivalent** if they can be written as the same fraction in lowest terms.

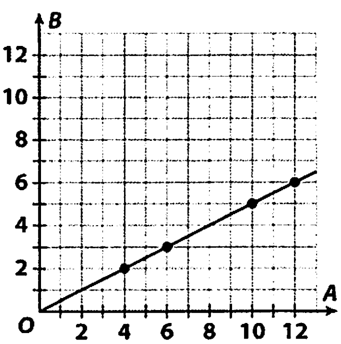
A **rate** is a ratio that shows the relationship between two different units of measure in lowest terms.

You can make a table of equivalent ratios. You can graph the equivalent ratios.

A	4	6	10	12
B	2	3	5	6

$\frac{4}{2} = \frac{2}{1}$ $\frac{6}{3} = \frac{2}{1}$

$\frac{10}{5} = \frac{2}{1}$ $\frac{12}{6} = \frac{2}{1}$



1. Use equivalent ratios to complete the table.

A	6	9			18		
B	2		4	5		7	8

2. Show the ratios are equivalent by simplifying any 4 of them.

____

3. Find the rate of $\frac{A}{B}$ and complete the equivalent ratio: $\frac{69}{\_\_\_}$.

____

4. Use the rate to find how many As are needed for 63 Bs, then write the ratio.

____

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LESSON 7-2

Solving Problems with Proportions

Reteach

You can solve problems with proportions in two ways.

A. Use equivalent ratios.

Hanna can wrap 3 boxes in 15 minutes.
How many boxes can she wrap in 45 minutes?

$\frac{3}{15} = \frac{\quad}{45}$

3 × 3 = ?
15 × **3** = 45

$\frac{3 \bullet 3}{15 \bullet 3} = \frac{9}{45}$

Hanna can wrap 9 boxes in 45 minutes.

B. Use unit rates.

Dan can cycle 7 miles in 28 minutes.
How long will it take him to cycle 9 miles?

$\frac{28 \text{ min}}{7 \text{mi}} = \frac{\quad}{1 \text{ mi}}$

Divide by 7.

$\frac{28}{7} = \frac{28 \div 7}{1} = \frac{4}{1}$, or 4 minutes per mile

To cycle 9 miles, it will take Dan 9 × 4, or 36 minutes.

Solve each proportion. Use equivalent ratios or unit rates. Round to the nearest hundredth if needed.

1. Twelve eggs cost $2.04. How much would 18 eggs cost?

____

2. Seven pounds of grapes cost $10.43. How much would 3 pounds cost? _____________________

3. Roberto wants to reduce a drawing that is 12 inches long by 9 inches wide. If his new drawing is 8 inches long, how wide will it be?

____