

NAME _____

DATE _____

Set B1 ★ Independent Worksheet 1



INDEPENDENT WORKSHEET

Padre's Pizza

1 It costs \$9.50 for a large pizza with cheese at Padre's Pizza. Each extra topping is \$1.00.

a Which equation could be used to find y , the amount of money it would cost for a large pizza with 4 extra toppings?

$$y = \$9.50 - \$4.00$$

$$y = \$9.50 \times (4 \times \$1.00)$$

$$y = \$9.50 + (4 \times \$1.00)$$

$$y = (4 \times \$1.00) \div \$9.50$$

b Explain your answer to part a. Why did you choose this equation instead of the others?

2 It's Ty's birthday. For his party, his mom bought 4 large pizzas with a total of 9 extra toppings.

a Which equation could be used to find y , the amount of money she had to pay?

$$y = \$9.50 + (9 \times \$1.00)$$

$$y = (4 \times \$9.50) + (4 \times \$1.00)$$

$$y = \$9.50 - (9 \times \$1.00)$$

$$y = (4 \times \$9.50) + (9 \times \$1.00)$$

b Explain your answer to part a. Why did you choose this equation instead of the others?

(Continued on back.)

NAME _____

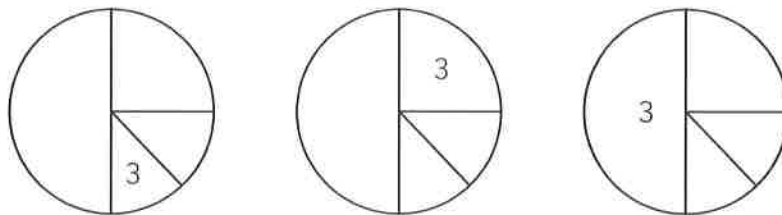
DATE _____

Independent Worksheet 1 Padre's Pizza (cont.)

4b Which of the 12 pizzas got all 4 toppings?

5 The boy's basketball team came into Padre's on Wednesday night after practice. Half the boys on this team also play soccer, $\frac{1}{4}$ play baseball, and $\frac{1}{8}$ are in the school band. The remaining 3 boys aren't in any other activities. No one is in more than 2 activities.

a How many boys are there on the basketball team? Circle the diagram that will give you the most help solving this problem.

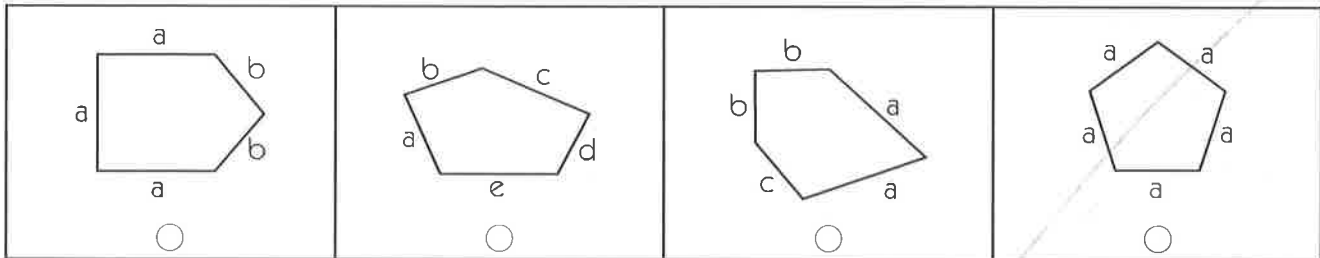


b Use the diagram you picked to help solve the problem. Show all of your work.

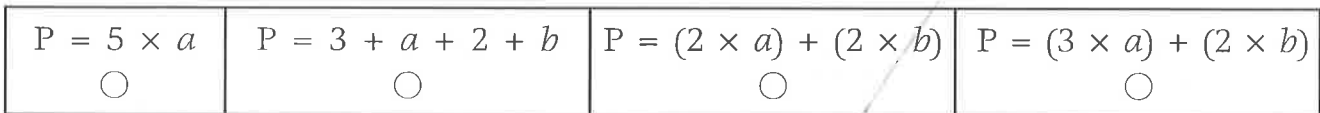
Independent Worksheet 2 Choosing Equations & Diagrams (cont.)

2 A pentagon has three longer sides that are all the same length and two shorter sides that are both the same length.

a Which diagram shows the pentagon described above?

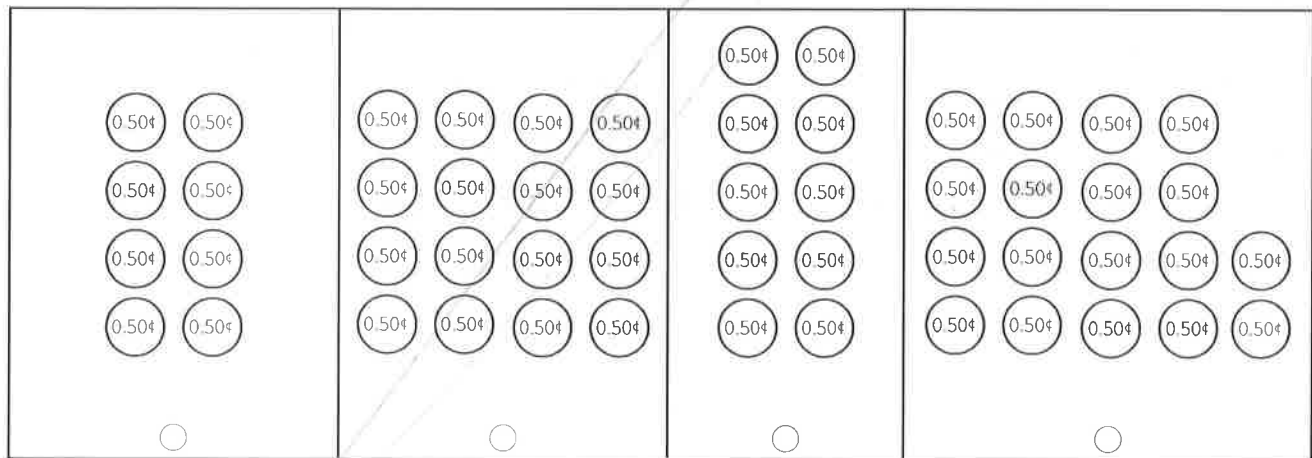


b Which equation could be used to find the perimeter of the pentagon?



3 Destiny is having a party. She wants to get two cookies for each of the 8 people, including herself, who will be at the party. If each cookie costs 50¢, how much money will she spend on cookies?

a Which diagram below best shows this problem?



b Explain your answer to part a. Why did you choose this diagram instead of the others?

(Continued on next page.)

Equations & Properties page 1 of 2

1 Solve this problem in your head: $5 \times 37 \times 2 =$

Order of operations says we multiply the numbers in order from left to right:

$$(5 \times 37) \times 2$$

We can use two properties to make this problem easier to solve:

Associative Property

Changing the way you group three numbers or numerical expressions when you add or multiply does not change the answer. $(2 + 3) + 4 = 2 + (3 + 4)$ and $(2 \times 3) \times 4 = 2 \times (3 \times 4)$

$$(5 \times 37) \times 2 = 5 \times (37 \times 2)$$

Commutative Property

Changing the order of two numbers or numerical expressions when you add or multiply does not change the answer. $5 + 3 = 3 + 5$ and $3 \times 4 = 4 \times 3$

$$5 \times (37 \times 2) = 5 \times (2 \times 37)$$

If we use the associative property again, we can make the problem even easier to solve.

$$5 \times (2 \times 37) = (5 \times 2) \times 37$$

$$10 \times 37 =$$

What's the answer?

NAME _____

DATE _____

Defining & Using the Properties

1 Write your own definition of each property, and give an example so you can remember how it works.

Property	Definition	Example
a Commutative		
b Associative		
c Distributive		

2 For each problem below:

- Use one or more of the above properties to rewrite the equation in a form that's easier to solve.
- Solve it and write the answer.
- Circle all the properties you used to rewrite the equation (C for commutative, A for Associative, and D for Distributive.)

Problem	Rewrite	Answer	Property
ex. $(70 + 469) + 30$	$(70 + 30) + 469$	569	C A D
a $(5 \times 39) \times 2$			C A D
b $(27 \times 25) \times 4$			C A D
c 4×27			C A D
d $(40 + 579) + 60$			C A D
e 6×28			C A D
f $(16 \times 50) \times 2$			C A D

Independent Worksheet 1 Properties Make It Easier (cont.)

Distributive Property When you multiply a number you can break that number apart. Multiply each part separately, and then add the products. You will still get the same answer.

2 Use the distributive property to make the problems below easier. Fill in the missing steps to get the answers.

example 6×13 ↓
$6 \times (10 + 3)$ ↓
$(6 \times 10) + (6 \times 3)$ ↓
$60 + 18 = 78$

a 7×23 ↓
$7 \times (20 + 3)$ ↓
↓
↓

b 8×24 ↓
$8 \times (20 + 4)$ ↓
↓
↓

c 5×45 ↓
↓
$(5 \times 40) + (5 \times 5)$ ↓
↓

d 3×28 ↓
↓
$(3 \times 20) + (3 \times 8)$ ↓
↓

e 5×63 ↓
↓
↓
↓

f 6×35 ↓
↓
↓
↓

g 9×24 ↓
$9 \times (20 + 4)$ ↓
↓
↓

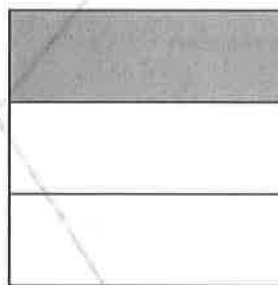
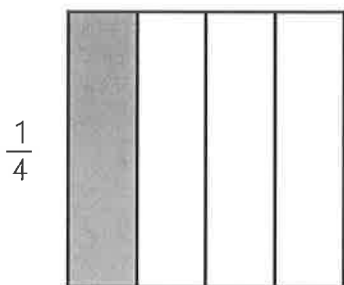
h 7×39 ↓
↓
↓
↓

Square Sandwiches & Bedroom Walls

1 Carlos had 2 extra square sandwiches. They were exactly the same size. He gave $\frac{1}{4}$ of the first sandwich to his friend Ben and $\frac{1}{3}$ of the second sandwich to his friend Corey.

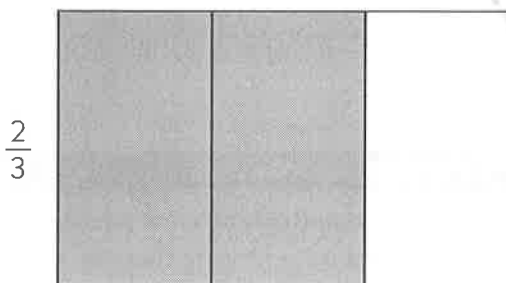
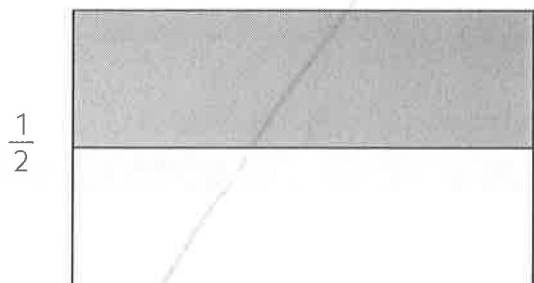
Ben said, "Hey, that's not fair! Corey got more than I did!"

Exactly how much more did Corey get? Divide each sandwich into same-sized pieces to find out.



2 Jasmine and Raven were painting 2 walls in Jasmine's bedroom. The 2 walls were exactly the same size. Jasmine painted $\frac{1}{2}$ of the first wall. Raven painted $\frac{2}{3}$ of the other wall.

Exactly how much more did Raven paint than Jasmine? Divide each wall into same-sized pieces to find out. Is there more than one answer?

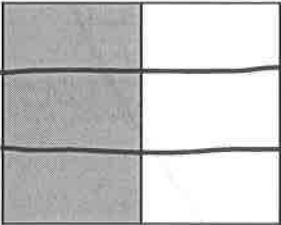
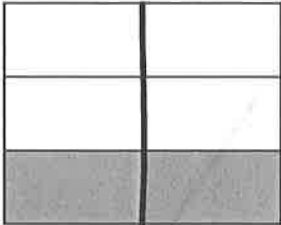
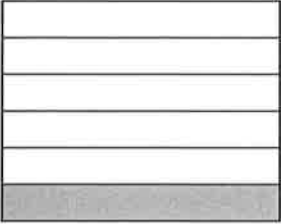
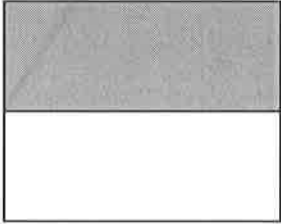
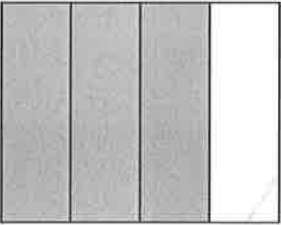
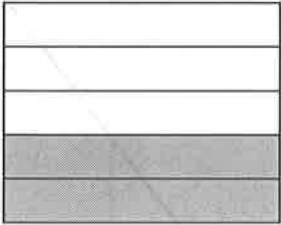
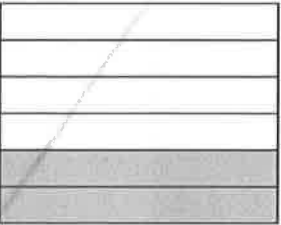
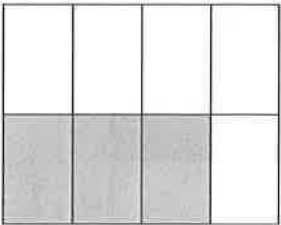


NAME _____

DATE _____

Fraction Equivalents Worksheet page 1 of 2

1 For each of the following pairs of fractions, draw in lines so they have the same number of pieces. Then write the equivalent fraction name beside both.

example	$\frac{1}{2}$ 	<div style="border: 1px solid black; padding: 5px; width: 40px; height: 40px; margin: auto;"> $\frac{3}{6}$ </div>	$\frac{1}{3}$ 	<div style="border: 1px solid black; padding: 5px; width: 40px; height: 40px; margin: auto;"> $\frac{2}{6}$ </div>
a	$\frac{1}{6}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>	$\frac{1}{2}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>
b	$\frac{3}{4}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>	$\frac{2}{5}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>
c	$\frac{2}{6}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>	$\frac{3}{8}$ 	<div style="border: 1px solid black; width: 40px; height: 40px; margin: auto;"></div>

NAME _____ DATE _____

Set A6 ★ Independent Worksheet 1



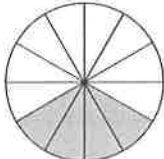
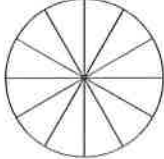
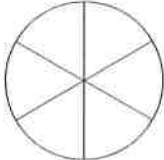
INDEPENDENT WORKSHEET

Using the Greatest Common Factor to Simplify Fractions

1 Write all the factors of each number below. Try to think of the factors in pairs.

- ex.** 2 1, 2 **a** 4 _____ **b** 8 _____
c 3 _____ **d** 6 _____ **e** 12 _____

2 You can simplify a fraction by dividing the numerator and the denominator by the same number. If you divide the numerator and denominator by the largest factor they have in common (the greatest common factor), you can show the fraction in its simplest form. Look carefully at the example below. Then fill in the rest of the table.

Fraction	Factors of the Numerator (Top Number)	Factors of the Denominator (Bottom Number)	Greatest Common Factor	Divide to Get the Simplest Form	Picture and Equation
ex. $\frac{4}{12}$	1, 2, ④	1, 2, 3 ④, 6, 12	4	$\frac{4 \div 4}{12 \div 4} = \frac{1}{3}$	 $\frac{4}{12} = \frac{1}{3}$
a $\frac{8}{12}$				$\frac{8 \div}{12 \div} = \frac{\quad}{\quad}$	 $\frac{8}{12} = \frac{\quad}{\quad}$
b $\frac{4}{6}$				$\frac{4 \div}{6 \div} = \frac{\quad}{\quad}$	 $\frac{4}{6} = \frac{\quad}{\quad}$

(Continued on back.)

NAME _____

DATE _____

Set A6 ★ Independent Worksheet 2



INDEPENDENT WORKSHEET

Finding the Least Common Denominator

Which is greater, $\frac{2}{3}$ or $\frac{4}{5}$? Exactly how much difference is there between these two fractions? If you want to compare, add, or subtract two fractions, it is easier if you rewrite them so they both have the same denominator.

To do this:

- Find the least common multiple of the denominators of the fractions.

multiples of 3 3, 6, 9, 12, 15

multiples of 5 5, 10, 15

The least common multiple of 3 and 5 is 15.

- Multiply the numerator and denominator of each fraction by the same number so the denominators are equal.

$$\frac{2 \times 5}{3 \times 5} = \frac{10}{15}$$

$$\frac{4 \times 3}{5 \times 3} = \frac{12}{15}$$

$$\frac{4}{5} \text{ is greater than } \frac{2}{3} \text{ by exactly } \frac{2}{15}$$

- Find the least common multiple (LCM) of each pair of numbers.

ex. 4 and 10 4, 8, 12, 16, 20 10, 20 20 is the LCM of 4 and 10	a 5 and 6	b 2 and 7
--	------------------	------------------

- Circle the fraction you think is greater in each pair. Then find out for sure by rewriting the fractions so they have common denominators. Hint: Use the information from problem 1 to help. Put a star by the fraction that turns out to be greater.

ex. $\left(\frac{3}{4}\right)$ ★ $\frac{7}{10}$ $\frac{3 \times 5}{4 \times 5} = \frac{15}{20}$ $\frac{7 \times 2}{10 \times 2} = \frac{14}{20}$	a $\frac{4}{5}$ $\frac{5}{6}$	b $\frac{1}{2}$ $\frac{4}{7}$
---	--------------------------------------	--------------------------------------

(Continued on back.)

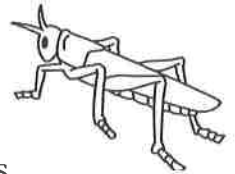
Set A6 ★ Independent Worksheet 3



INDEPENDENT WORKSHEET

LCM & GCF

1 Two grasshoppers are hopping up the stairs. Gary starts at the bottom and hops up 3 stairs at a time. First he lands on step 3, then step 6, and so on. Grace starts at the bottom and hops up 4 stairs at a time. First she lands on step 4, then step 8, and so on.



a The staircase has 24 steps. On which steps will both grasshoppers land? Use labeled sketches, numbers, and/or words to solve the problem. Show your work.

Both grasshoppers will land on steps _____.

b What is the first step on which both grasshoppers will land? _____
This is the least common multiple of 3 and 4.

2 Find the least common multiple (LCM) of each pair of numbers.

<p>ex. 6 and 8</p> <p>6, 12, 18, 24 8, 16, 24 24 is the LCM of 6 and 8</p>	<p>a 4 and 9</p>	<p>b 5 and 8</p>	<p>c 6 and 14</p>
---	-------------------------	-------------------------	--------------------------

3 Circle the fraction you think is greater in each pair. Then find out for sure by rewriting the fractions so they have common denominators. Hint: Use the information from problem 2 to help. Put a star by the fraction that turns out to be greater.

<p>ex. $\frac{5}{6}$ ★ $\frac{6}{8}$</p> <p>$\frac{5 \times 4}{6 \times 4} = \frac{20}{24}$ $\frac{6 \times 3}{8 \times 3} = \frac{18}{24}$</p>	<p>a $\frac{3}{4}$ $\frac{7}{9}$</p>	<p>b $\frac{2}{5}$ $\frac{3}{8}$</p>	<p>c $\frac{4}{6}$ $\frac{9}{14}$</p>
--	---	---	--

(Continued on back.)

NAME _____

DATE _____

Set A5 ★ Independent Worksheet 1



INDEPENDENT WORKSHEET

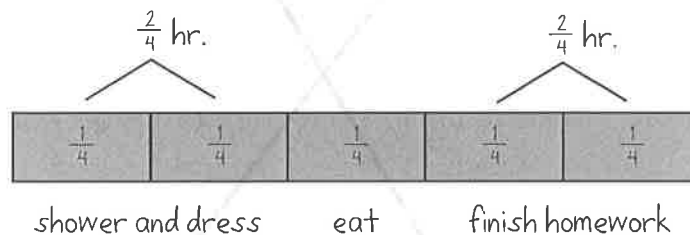
Fractions through the School Day

Make a labeled sketch to solve each of the problems below. Use words to explain your answer, and write an equation to match. Use your fraction kit to help if you want.

Note: If the answer turns out to be an improper fraction, change it to a mixed number.

example Sam and Ali are friends. They're both in Mrs. Hill's fifth grade class. When Sam gets up on school days, it takes him $\frac{2}{4}$ of an hour to take a shower and get dressed, $\frac{1}{4}$ to eat breakfast, and $\frac{2}{4}$ of an hour to finish his homework. How long does it take Sam to get ready for school?

a Labeled Sketch



b Explanation (in words):

2 fourths plus 1 fourth plus 2 more fourths is 5 fourths in all. There are 4 fourths in an hour, so it takes him 1 and $\frac{1}{4}$ hours to get ready for school.

c Equation:

$$\frac{2}{4} + \frac{1}{4} + \frac{2}{4} = \frac{5}{4} \quad \frac{5}{4} = 1\frac{1}{4} \text{ hour}$$

(Continued on back.)

Independent Worksheet 1 Fractions through the Day (cont.)

3 Ali had $\frac{5}{6}$ of a granola bar in her lunchbox. She ate $\frac{3}{6}$ of the bar at recess. What fraction of the bar did she have left for lunch?

a Labeled Sketch

b Explanation (in words):

c Equation:

4 They had a math test after recess. Mrs. Hill said, "You have $\frac{8}{12}$ of an hour to complete the test." After $\frac{6}{12}$ of an hour, Sam only had 1 page left to go. How much of an hour did he have left to finish the last page?

a Labeled Sketch

b Explanation (in words):

c Equation:

(Continued on back.)

NAME _____

DATE _____

Set A5 ★ Independent Worksheet 2



INDEPENDENT WORKSHEET

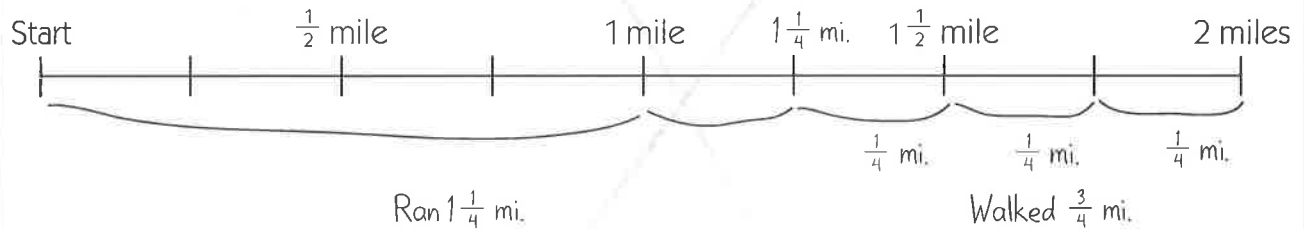
Fractions on the Trail

There is a 2-mile hiking trail behind Kennedy School. Make a labeled sketch on the map to solve each of the problems below. Add more marks and fractions to the line if you need to. Use words to explain your answer, and write an equation to match.

Note: If the answer turns out to be an improper fraction, change it to a mixed number.

example Marissa and her mom ran the first $1\frac{1}{4}$ miles of the trail. They got tired, so they walked the rest of the way. How far did they walk?

a Labeled Sketch



b Explanation (in words):

They walked $\frac{3}{4}$ of a mile because $2 - 1$ leaves 1 mile, and then they ran another $\frac{1}{4}$ of a mile. That left $\frac{3}{4}$ of mile to go.

c Equation

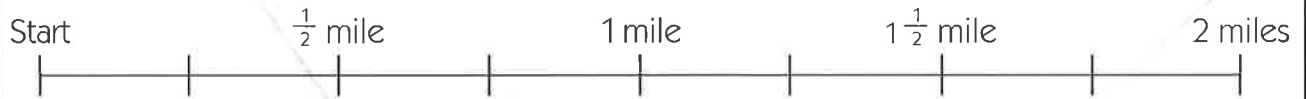
$$2 - 1\frac{1}{4} = \frac{3}{4} \text{ mile}$$

(Continued on back.)

Fractions Independent Worksheet 2 Fractions on the Trail (cont.)

3 Kendra and her grandma walked $1\frac{3}{8}$ of a mile down the trail. Then they turned around and walked back to the start. How many miles did they walk in all?

a Labeled Sketch

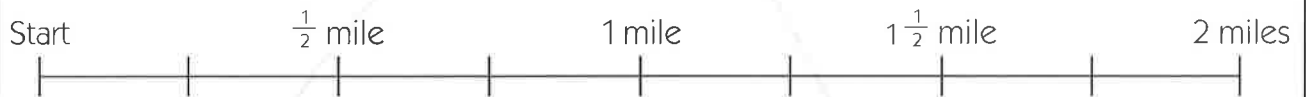


b Explanation (in words):

c Equation:

4 Carter was walking down the trail. When he got to the $\frac{3}{4}$ mile marker, he realized that his glasses had slipped out of his pocket. He turned around and started to go back. He found his glasses right beside the $\frac{2}{4}$ mile marker. Then he turned around and walked to the end of the trail to meet his friend. How many miles did he walk in all?

a Labeled Sketch



b Explanation (in words):

c Equation:

(Continued on back.)

NAME _____

DATE _____

Set A5 ★ Independent Worksheet 3

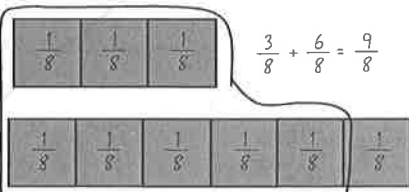


INDEPENDENT WORKSHEET

Adding & Subtracting Fractions

Use numbers, words, *and* labeled sketches to solve each of the problems below. Show all of your work. Use your fraction kit to help if you want.

Note: If the answer turns out to be an improper fraction, change it to a mixed number.

Problem	Explanation
<p>example</p> $1\frac{3}{8} + 2\frac{6}{8} = 4\frac{1}{8}$	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> $1\frac{3}{8}$ $2\frac{6}{8}$ </div> <div style="border: 1px solid black; padding: 5px; width: 300px;"> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px; text-align: center;">1</div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px; text-align: center;">1</div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px; text-align: center;">1</div> </div> <div style="margin-left: 20px;"> $\frac{1}{8} \quad \frac{1}{8} \quad \frac{1}{8}$ $\frac{3}{8} + \frac{6}{8} = \frac{9}{8}$  <p>$\frac{9}{8}$ makes $1\frac{1}{8}$ because there are $\frac{8}{8}$ in 1, and then you have $\frac{1}{8}$ left over.</p> </div> </div> <p style="text-align: center; margin-top: 10px;">$1 + 2 = 3$ $3 + 1\frac{1}{8} = 4$</p>
<p>1</p> $\frac{5}{6} + \frac{3}{6} =$	Empty space for student work

(Continued on back.)

Independent Worksheet 3 Adding & Subtracting Fractions (cont.)

Problem	Explanation
<p>5</p> $\begin{array}{r} 3\frac{5}{6} \\ + 2\frac{3}{6} \\ \hline \end{array}$	
<p>6</p> $\begin{array}{r} 3\frac{4}{8} \\ - 2\frac{2}{8} \\ \hline \end{array}$	



CHALLENGE

<p>7</p> $\begin{array}{r} 4\frac{2}{6} \\ - 2\frac{5}{6} \\ \hline \end{array}$	
---	--

NAME _____

DATE _____

Set A3 ★ Independent Worksheet 1



INDEPENDENT WORKSHEET

Using Compatible Numbers to Multiply & Divide

Mathematicians sometimes estimate answers to multiplication and division problems by using *compatible numbers*. Compatible numbers are numbers that work well together.

example 1 A page in my chapter book has 12 words in each line and 32 lines on the page. *About* how many words on the whole page? Change 12 and 32 to nearby numbers that are easier to multiply in your head.

12 is close to 10

32 is close to 30

$10 \times 30 = 300$, so the page has about 300 words.

example 2 Mr. Gomez had 396 crayons left over at the end of the year. He's putting them in bags to send home with the kids. He has 20 students in his class. *About* how many crayons will each student get? Change 396 to a nearby number that is easier to divide by 20.

396 is close to 400.

20 is already a friendly number. You don't always have to change both numbers.

$400 \div 20 = 20$, so each student will get about 20 crayons.

1 Choose a chapter book from your classroom. Turn to a page in the middle of the book. *About* how many words do you think there are on the page? To find out, count the number of words in one line. Next, count the number of lines on the page. Record the information:

Words in one line _____

Lines on the page _____

2 Use compatible numbers to estimate the number of words on the page. Show your work.

(Continued on back.)

NAME _____

DATE _____

Set A3 ★ Independent Worksheet 2**INDEPENDENT WORKSHEET****More Multiplication & Division with Compatible Numbers**

1 Which 2 numbers in the box could you multiply to come closest to 600? Circle them. Show your thinking.

39	47	5	62	87	11	5	26
----	----	---	----	----	----	---	----

2 Estimate the answers to the following multiplication problems. Use compatible numbers to help. Show your work. The first one is done for you.

<p>example 31×28</p> <p>31 is close to <u>30</u>.</p> <p>28 is close to <u>30</u>.</p> <p><u>30</u> \times <u>30</u> = <u>900</u>,</p> <p>so the answer is about <u>900</u>.</p>	<p>a 39×22</p>
<p>b 84×11</p>	<p>c 48×18</p>

(Continued on back.)

NAME _____

DATE _____

Set A3 ★ Independent Worksheet 3**INDEPENDENT WORKSHEET****Reasonable Estimates in Multiplication & Division**

1 Fill in the bubble in front of the answer that gives a reasonable estimate for each problem. (Hint: Try using compatible numbers to help.) To the right of the problem, use words, numbers and/or pictures to explain why you think it is a reasonable estimate. The first one is done for you.

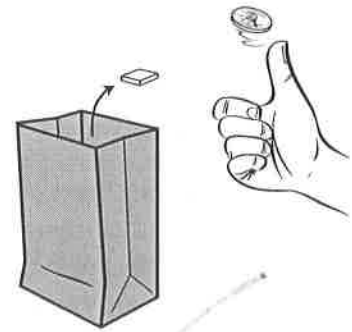
<p>example</p> $\begin{array}{r} 19 \\ \times 22 \\ \hline \end{array}$ <p><input type="radio"/> 229 <i>19 is close to 20. 22 is close to 20.</i></p> <p><input type="radio"/> 290 <i>20 × 20 = 400, so 400 is the</i></p> <p><input checked="" type="radio"/> 400 <i>best estimate.</i></p> <p><input type="radio"/> 500</p>	<p>a</p> $\begin{array}{r} 28 \\ \times 21 \\ \hline \end{array}$ <p><input type="radio"/> 400</p> <p><input type="radio"/> 500</p> <p><input type="radio"/> 600</p> <p><input type="radio"/> 700</p>
<p>b</p> $\begin{array}{r} 26 \\ \times 9 \\ \hline \end{array}$ <p><input type="radio"/> 180</p> <p><input type="radio"/> 260</p> <p><input type="radio"/> 300</p> <p><input type="radio"/> 540</p>	<p>c $206 \div 19 =$</p> <p><input type="radio"/> 10</p> <p><input type="radio"/> 16</p> <p><input type="radio"/> 20</p> <p><input type="radio"/> 26</p>
<p>d $598 \div 18 =$</p> <p><input type="radio"/> 18</p> <p><input type="radio"/> 21</p> <p><input type="radio"/> 25</p> <p><input type="radio"/> 30</p>	<p>e $994 \div 19 =$</p> <p><input type="radio"/> 40</p> <p><input type="radio"/> 45</p> <p><input type="radio"/> 50</p> <p><input type="radio"/> 60</p>

(Continued on back.)

Counting the Possible Outcomes page 1 of 2

Rafael put 4 tile in a bag, one green, one red, one yellow, and one blue. Then he shook the bag to mix the tile.

If he flips a penny and pulls 1 tile out of the bag without looking, what is the probability that the penny will land on heads and the tile he pulls out will be green?



What do you have to do to find out?

To determine probability, you need to know all the different things that can happen. A list of all the possible outcomes is called a *sample space*.

You can make a sample space for a probability experiment by thinking of all the possibilities and writing them down. Here are two other methods:

1 Make a chart.

Heads



Tails



	Green	Red	Yellow	Blue
Heads				
Tails				

NAME _____

DATE _____

Amber's Experiment

1 Amber is going to flip a penny and roll a die at the same time. The die has the numbers 1, 2, 3, 4, 5, and 6 on it. What is the probability that the penny will land on heads and the die will land on 4? Write your prediction here and explain your thinking.



2 You are going to make 2 kinds of sample spaces for this experiment. Remember, a sample space is a list of all the possible outcomes.

a Think before you start. What are the possible outcomes for the penny flip?

b What are the possible outcomes for the die roll?

c Complete the chart below to show all the possible outcomes of Amber's experiment.

Number Rolled

Heads



Tails



	2			5	
Heads	H2				
Tails				T5	

d On the back of this sheet, make a tree diagram to show all the possible outcomes of Amber's experiment.

3 How many possible outcomes are there in this experiment? _____

4 What is the probability that the penny will land on heads and the die will land on 4? Express your answer as a fraction.