

Independent Practice ~ Lesson 4

1. Find the sum. Show your work to justify your answer.

a. $4 + 17$

d. $-3 + (-5) + 8$

b. $-6 + (-12)$

e. $\frac{1}{3} + \left(-2\frac{1}{4}\right)$

c. $2.2 + (-3.7)$

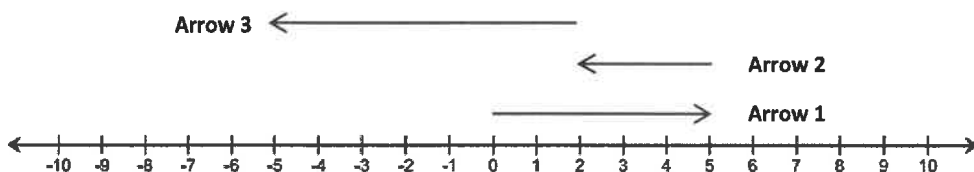
2. Which of these story problems describes the sum $19 + (-12)$? Check all that apply. Show your work to justify your answer.

_____ Jared’s dad paid him \$19 for raking the leaves from the yard on Wednesday. Jared spent \$12 at the movie theater on Friday. How much money does Jared have left?

_____ Jared owed his brother \$19 for raking the leaves while Jared was sick. Jared’s dad gave him \$12 for doing his chores for the week. How much money does Jared have now?

_____ Jared’s grandmother gave him \$19 for his birthday. He bought \$8 worth of candy and spent another \$4 on a new comic book. How much money does Jared have left over?

3. Use the diagram below to complete each part.



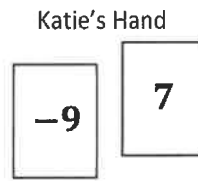
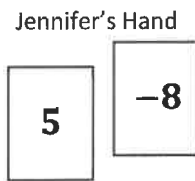
a. Label each arrow with the number the arrow represents.

b. How long is each arrow? What direction does each arrow point?

Arrow	Length	Direction
1		
2		
3		

c. Write an equation that represents the sum of the numbers. Find the sum.

4. Jennifer and Katie were playing the Integer Game in class. Their hands are represented below.



- a. What is the value of each of their hands? Show your work to support your answer.
- b. If Jennifer drew two more cards, is it possible for the value of her hand not to change? Explain why/why not.
- c. If Katie wanted to win the game by getting a score of 0, what card would she need? Explain.
- d. If Jennifer drew -1 and -2 , what would be her new score? Show your work to support your answer.

Independent Practice ~ Lesson 7

Represent each of the following problems using both a number line diagram and an equation.

1. A bird that was perched atop a $15\frac{1}{2}$ -foot tree dives down six feet to a branch below. How far above the ground is the bird's new location?
2. Mariah owed her grandfather \$2.25 but was recently able to pay him back \$1.50. How much does Mariah currently owe her grandfather?
3. Jake is hiking a trail that leads to the top of a canyon. The trail is 4.2 miles long, and Jake plans to stop for lunch after he completes 1.6 miles. How far from the top of the canyon will Jake be when he stops for lunch?
4. Sonji and her friend Rachel are competing in a running race. When Sonji is 0.4 miles from the finish line, she notices that her friend Rachel has fallen. If Sonji runs one-tenth of a mile back to help her friend, how far will she be from the finish line?
5. Mr. Henderson did not realize his checking account had a balance of \$200 when he used his debit card for a \$317.25 purchase. What is his checking account balance after the purchase?
6. If the temperature is -3°F at 10:00 p.m., and the temperature falls four degrees overnight, what is the resulting temperature?

Independent Practice ~ Lesson 8

1. Represent each sum as a single rational number.

a. $-14 + \left(-\frac{8}{9}\right)$

b. $7 + \frac{1}{9}$

c. $-3 + \left(-\frac{1}{6}\right)$

Rewrite each of the following to show that *the opposite of a sum is the sum of the opposites*. Problem 2 has been completed as an example.

2. $-(9 + 8) = -9 + (-8)$
 $-17 = -17$

4. $-(10 + (-6))$

3. $-\left(\frac{1}{4} + 6\right)$

5. $- \left((-55) + \frac{1}{2} \right)$

Use your knowledge of rational numbers to answer the following questions.

6. Meghan said the opposite of the sum of -12 and 4 is 8 . Do you agree? Why or why not?

7. Jolene lost her wallet at the mall. It had $\$10$ in it. When she got home, her brother felt sorry for her and gave her $\$5.75$. Represent this situation with an expression involving rational numbers. What is the overall change in the amount of money Jolene has?

8. Isaiah is completing a math problem and is at the last step: $25 - 28\frac{1}{5}$. What is the answer? Show your work.
9. A number added to its opposite equals zero. What do you suppose is true about *a sum added to its opposite*? Use the following examples to reach a conclusion. Express the answer to each example as a single rational number.
- a. $(3 + 4) + (-3 + -4)$
- b. $(-8 + 1) + (8 + (-1))$
- c. $\left(-\frac{1}{2} + \left(-\frac{1}{4}\right)\right) + \left(\frac{1}{2} + \frac{1}{4}\right)$

Independent Practice ~ Lesson 9

Show all steps taken to rewrite each of the following as a single rational number.

1. $80 + \left(-22\frac{4}{15}\right)$

2. $10 + \left(-3\frac{3}{8}\right)$

3. $\frac{1}{5} + 20.3 - \left(-5\frac{3}{5}\right)$

4. $\frac{11}{12} - (-10) - \frac{5}{6}$

5. Explain, step by step, how to arrive at a single rational number to represent the following expression. Show both a written explanation and the related math work for each step.

$$1 - \frac{3}{4} + \left(-12\frac{1}{4}\right)$$

Independent Practice ~ Lesson 13

- Convert each terminating decimal to a fraction in its simplest form.
 - 0.4
 - 0.16
 - 0.625
 - 0.08
 - 0.012
- Convert each fraction or mixed number to a decimal using an equivalent fraction.
 - $\frac{4}{5}$
 - $\frac{3}{40}$
 - $\frac{8}{200}$

Independent Practice ~ Lesson 14

1. Convert each rational number into its decimal form.

	$\frac{1}{6} =$ _____	$\frac{1}{9} =$ _____
		$\frac{2}{9} =$ _____
$\frac{1}{3} =$ _____	$\frac{2}{6} =$ _____	$\frac{3}{9} =$ _____
		$\frac{4}{9} =$ _____
	$\frac{3}{6} =$ _____	$\frac{5}{9} =$ _____
$\frac{2}{3} =$ _____	$\frac{4}{6} =$ _____	$\frac{6}{9} =$ _____
		$\frac{7}{9} =$ _____
	$\frac{5}{6} =$ _____	$\frac{8}{9} =$ _____

One of these decimal representations is not like the others. Why?

2. Chandler tells Aubrey that the decimal value of $-\frac{1}{17}$ is not a repeating decimal. Should Aubrey believe him? Explain.

3. Complete the quotients below without using a calculator, and answer the questions that follow.
 a. Convert each rational number in the table to its decimal equivalent.

$\frac{1}{11} =$	$\frac{2}{11} =$	$\frac{3}{11} =$	$\frac{4}{11} =$	$\frac{5}{11} =$
$\frac{6}{11} =$	$\frac{7}{11} =$	$\frac{8}{11} =$	$\frac{9}{11} =$	$\frac{10}{11} =$

Do you see a pattern? Explain.

b. Convert each rational number in the table to its decimal equivalent.

$\frac{0}{99} =$	$\frac{10}{99} =$	$\frac{20}{99} =$	$\frac{30}{99} =$	$\frac{45}{99} =$
$\frac{58}{99} =$	$\frac{62}{99} =$	$\frac{77}{99} =$	$\frac{81}{99} =$	$\frac{98}{99} =$

Do you see a pattern? Explain.

c. Can you find other rational numbers that follow similar patterns?

Independent Practice ~ Lesson 15 (Rational Numbers)

1. At lunch time, Benjamin often borrows money from his friends to buy snacks in the school cafeteria. Benjamin borrowed \$0.75 from his friend Clyde five days last week to buy ice cream bars. Represent the amount Benjamin borrowed as the product of two rational numbers; then, determine how much Benjamin owed his friend last week.
2. Monica regularly records her favorite television show. Each episode of the show requires 3.5% of the total capacity of her video recorder. Her recorder currently has 62% of its total memory free. If Monica records all five episodes this week, how much space will be left on her video recorder?

For Problems 3–5, find at least two possible sets of values that will work for each problem.

3. Fill in the blanks with two rational numbers (other than 1 and -1). $\underline{\quad} \times \left(-\frac{1}{2}\right) \times \underline{\quad} = -20$
What must be true about the relationship between the two numbers you chose?
4. Fill in the blanks with two rational numbers (other than 1 and -1). $-5.6 \times 100 \div 80 \times \underline{\quad} \times \underline{\quad} = 700$
What must be true about the relationship between the two numbers you chose?
5. Fill in the blanks with two rational numbers. $\underline{\quad} \times \underline{\quad} = -0.75$
What must be true about the relationship between the two numbers you chose?

For Problems 6–8, create word problems that can be represented by each expression, and then represent each product or quotient as a single rational number.

6. $8 \times (-0.25)$

7. $-6 \div \left(1\frac{1}{3}\right)$

8. $-\frac{1}{2} \times 12$

Independent Practice ~ Lesson 16

1. Evaluate the expression $-2.2 \times (-2) \div \left(-\frac{1}{4}\right) \times 5$

a. Using the order of operations only.

b. Using the properties and methods used in Lesson 16.

c. If you were asked to evaluate another expression, which method would you use, (a) or (b), and why?

2. Evaluate the expressions using the distributive property.

a. $\left(2\frac{1}{4}\right) \times (-8)$

b. $\frac{2}{3}(-7) + \frac{2}{3}(-5)$

3. Mia evaluated the expression below but got an incorrect answer. Find Mia's error(s), find the correct value of the expression, and explain how Mia could have avoided her error(s).

$$0.38 \times 3 \div \left(-\frac{1}{20}\right) \times 5 \div (-8)$$

$$0.38 \times 5 \times \left(\frac{1}{20}\right) \times 3 \times (-8)$$

$$0.38 \times \left(\frac{1}{4}\right) \times 3 \times (-8)$$

$$0.38 \times \left(\frac{1}{4}\right) \times (-24)$$

$$0.38 \times (-6)$$

$$-2.28$$

- a. What are the two errors that Mia made?

- b. Evaluate the expression correctly. Show all your work

- c. Explain how Mia could have avoided her errors?