Name _____ Date _____ Class _____

LESSON 4

Fraction Operations

Reading Strategies: Summarize

The following steps are used to solve addition and subtraction equations with fractions.

$$2\frac{1}{3} + m = 5$$

$2\frac{1}{3} - 2\frac{1}{3} + m = 5 - 2\frac{1}{3}$ ← **Step 1:** Subtract $2\frac{1}{3}$ from both sides of the equation.

$m = 5 - 2\frac{1}{3}$

$m = 4\frac{3}{3} - 2\frac{1}{3}$ ← **Step 2:** Regroup 5 as $4\frac{3}{3}$

$m = 2\frac{2}{3}$ ← **Step 3:** Subtract fractions. Subtract whole numbers.

Answer each question.

1. What is the first step in the example above?

_____

2. Why was $2\frac{1}{3}$ subtracted from both sides of the equation?

_____

3. What is the second step in the example above?

_____

Use this equation to answer the following questions:

$x - 3\frac{2}{3} = 2\frac{2}{3}$

4. What is the first step to solve the equation?

_____

5. What is the next step to solve the equation?

_____

6. Write how you solve equations that involve fractions.

_____

_____

9. $f = \frac{4}{9}$

10. $b = \frac{7}{8}$

11. $t = 2\frac{1}{10}$

12. $w = 2\frac{1}{12}$

13. $c = 18\frac{1}{2}$

14. $h = 1\frac{5}{6}$

15. $g = 4\frac{5}{6}$

16. $6\frac{1}{2}$ minutes

17. $3\frac{5}{6}$ gallons

Practice B

1. $x = 4\frac{13}{16}$

2. $z = 4\frac{5}{8}$

3. $n = 8\frac{2}{7}$

4. $a = 3\frac{5}{22}$

5. $k = \frac{7}{12}$

6. $r = \frac{9}{10}$

7. $q = 13\frac{19}{35}$

8. $p = 1\frac{3}{5}$

9. $c = 5\frac{3}{8}$

10. $c = 1\frac{1}{4}$

11. $14\frac{2}{3}$ inches

12. $2\frac{5}{8}$ miles

Practice C

1. $p = 1\frac{1}{15}$

2. $d = 20\frac{19}{20}$

3. $x = 15\frac{13}{24}$

4. $a = 5\frac{23}{44}$

5. $f = 18\frac{11}{50}$

6. $c = 3\frac{19}{24}$

7. $r = 5\frac{1}{10}$

8. $s = 7\frac{1}{10}$

9. $3\frac{1}{24}$ feet

10. $8\frac{1}{4}$ inches

Review for Mastery

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

2. $6\frac{3}{4}$

3. $4\frac{7}{8}$

4. $2\frac{11}{12}$

5. $x = 9\frac{1}{4}$

6. $x = 5$

7. $x = 2\frac{3}{4}$

8. $x = 3\frac{7}{10}$

Challenge

1. $2 \cdot \frac{7}{9} = \frac{14}{9} = 1\frac{5}{9}$

   $1\frac{5}{9} + 12 = 13\frac{5}{9}$

   $13\frac{5}{9} \div 2 = \frac{122}{18} = 6\frac{14}{18} = 6\frac{7}{9}$

   $6\frac{7}{9} - \frac{7}{9} = 6$

2. $2 \cdot 3\frac{1}{4} = \frac{26}{4} = 6\frac{2}{4} = 6\frac{1}{2}$

   $6\frac{1}{2} + 12 = 18\frac{1}{2}$

   $18\frac{1}{2} \div 2 = \frac{37}{4} = 9\frac{1}{4}$

   $9\frac{1}{4} - 3\frac{1}{4} = 6$

Problem Solving

1. $\frac{3}{4}$ of an hour

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

3. $\frac{1}{3}$ mile more

4. $\frac{2}{3}$ minute

5. A

6. G

7. A

8. G

Reading Strategies

1. Subtract $2\frac{1}{3}$ from both sides of the equation.
2. To get *m* by itself.
3. Regroup 5 as $4\frac{3}{3}$.
4. Add $3\frac{2}{3}$ to both sides of the equation.
5. Add fractions and whole numbers.
6. Possible answer: Get the variable on one side of the equation, rename if needed, add or subtract fractions, and add or subtract whole numbers.