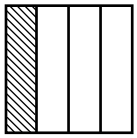
Name _____ Class _____ Date _____

Reteaching 4-1

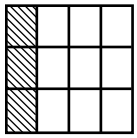
Multiplying Fractions and Mixed Numbers

You can model $\frac{2}{3}$ of $\frac{1}{4}$.

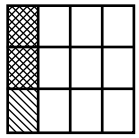
① Show $\frac{1}{4}$.



② Divide into thirds.



③ Shade $\frac{2}{3}$ of the $\frac{1}{4}$.



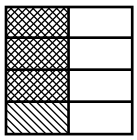
$\frac{2}{3}$ of $\frac{1}{4} = \frac{2}{12} = \frac{1}{6}$

Or you can use multiplication.

$$\frac{2}{3} \text{ of } \frac{1}{4} = \frac{2}{3} \times \frac{1}{4}$$
$$= \frac{2 \times 1}{3 \times 4}$$
$$= \frac{2}{12}$$
$$= \frac{1}{6}$$

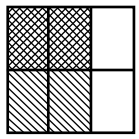
Write the multiplication problem each model represents.

1.



_____

2.



_____

Find each product.

3. $\frac{1}{9}$ of $\frac{2}{3}$ _____

4. $\frac{2}{7} \times \frac{1}{2}$ _____

5. $\frac{5}{8} \cdot 6$ _____

6. $\frac{3}{4} \cdot \frac{4}{7}$ _____

7. $\frac{7}{10}$ of $\frac{1}{3}$ _____

8. $\frac{5}{6} \times \frac{3}{4}$ _____

9. $\frac{3}{8}$ of $\frac{7}{10}$ _____

10. $\frac{3}{4} \times \frac{1}{9}$ _____

11. $\frac{2}{9}$ of 8 _____

12. $\frac{1}{3}$ of 2 _____

13. $\frac{5}{9}$ of 4 _____

14. $\frac{3}{4} \cdot \frac{2}{5}$ _____

15. Every day you eat $\frac{1}{4}$ cup of cereal. Your brother eats 5 times as much. How many cups of cereal does your brother eat? _____

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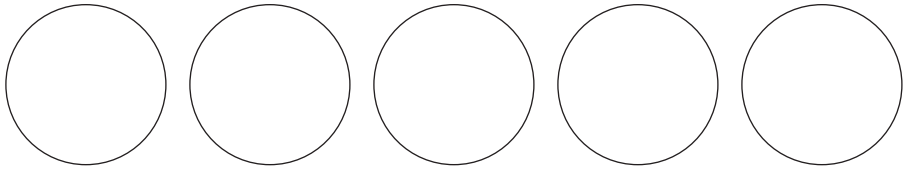
Reteaching 4-2

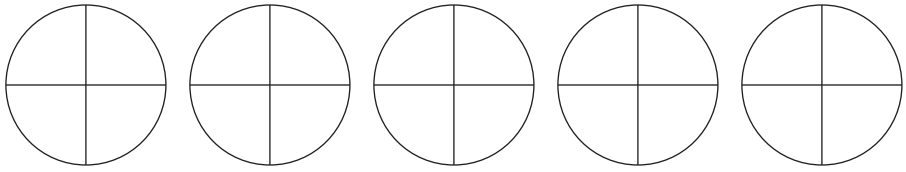
Modeling Fraction Division

You can model $5 \div \frac{1}{4}$.

1. Draw 5 circles to represent the dividend 5.

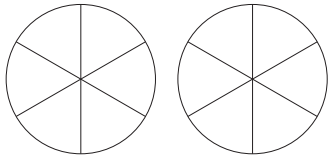


2. Divide each circle into fourths to represent the divisor $\frac{1}{4}$.

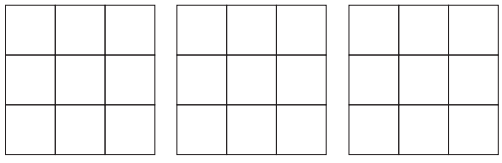


3. Find the total number of pieces you have.
   The total is 20 pieces.
4. This shows $5 \div \frac{1}{4} = 20$.

Write the division problem each model represents.

1. 

_____

2. 

_____

Find each quotient.

3. $10 \div \frac{1}{4}$ _____
4. $12 \div \frac{1}{2}$ _____
5. $8 \div \frac{1}{5}$ _____
6. $20 \div \frac{1}{3}$ _____
7. $4 \div \frac{1}{7}$ _____
8. $11 \div \frac{1}{5}$ _____
9. $6 \div \frac{1}{10}$ _____
10. $9 \div \frac{1}{6}$ _____

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Reteaching 4-3

Dividing Fractions

Find $8 \div \frac{4}{5}$.

① The *reciprocal* of $\frac{4}{5}$ is $\frac{5}{4}$.

$\frac{4}{5}$ $\frac{5}{4}$

② Multiply 8 by the reciprocal.

$8 \div \frac{4}{5} = 8 \times \frac{5}{4} = \frac{2\cancel{8}}{1} \times \frac{5}{\cancel{4}_1} = \frac{2 \times 5}{1 \times 1} = 10$

$8 \div \frac{4}{5} = 10$

Find $\frac{4}{9} \div \frac{8}{15}$.

① The *reciprocal* of $\frac{8}{15}$ is $\frac{15}{8}$.

$\frac{8}{15}$ $\frac{15}{8}$

② Multiply $\frac{4}{9}$ by the reciprocal.

$\frac{4}{9} \div \frac{8}{15} = \frac{4}{9} \times \frac{15}{8} = \frac{1\cancel{4}}{\cancel{9}_3} \times \frac{\cancel{15}^5}{\cancel{8}_2} = \frac{1 \times 5}{3 \times 2} = \frac{5}{6}$

$\frac{4}{9} \div \frac{8}{15} = \frac{5}{6}$

Write the reciprocal of each number.

1. $\frac{1}{4}$ _____ **2.** $\frac{5}{3}$ _____ **3.** $\frac{1}{20}$ _____

4. $\frac{8}{9}$ _____ **5.** 14 _____ **6.** 18 _____

7. $\frac{5}{9}$ _____ **8.** $\frac{3}{11}$ _____ **9.** $\frac{9}{7}$ _____

10. $\frac{11}{12}$ _____ **11.** $\frac{2}{7}$ _____ **12.** $\frac{3}{15}$ _____

Find each quotient.

13. $2 \div \frac{2}{3}$ _____ **14.** $7 \div \frac{7}{8}$ _____ **15.** $9 \div \frac{3}{4}$ _____

16. $6 \div \frac{2}{5}$ _____ **17.** $5 \div \frac{2}{3}$ _____ **18.** $14 \div \frac{5}{6}$ _____

19. $\frac{4}{5} \div \frac{4}{7}$ _____ **20.** $\frac{7}{8} \div \frac{7}{9}$ _____ **21.** $\frac{4}{7} \div 2$ _____

22. $\frac{7}{8} \div \frac{2}{3}$ _____ **23.** $\frac{1}{2} \div 4$ _____ **24.** $\frac{2}{5} \div \frac{3}{4}$ _____

25. $\frac{9}{10} \div 3$ _____ **26.** $\frac{3}{5} \div 5$ _____ **27.** $\frac{5}{8} \div 10$ _____

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Reteaching 4-4

Dividing Mixed Numbers

Example 1: Estimate $36\frac{1}{3} \div 5\frac{7}{8}$.

$36\frac{1}{3} \div 5\frac{7}{8}$ — Round mixed numbers to nearest whole number.

$36 \div 6 = 6$ — Find the quotient of the rounded values.

Example 2: Find $5\frac{1}{3} \div 2\frac{2}{5}$.

① Write each mixed number as an improper fraction.

$$5\frac{1}{3} \div 2\frac{2}{5} = \frac{16}{3} \div \frac{12}{5}$$

② The *reciprocal* of $\frac{12}{5}$ is $\frac{5}{12}$.

$$\frac{12}{5} \quad \frac{5}{12}$$

③ Multiply $\frac{16}{3}$ by the reciprocal.

$$\frac{16}{3} \div \frac{12}{5} = \frac{\overset{4}{\cancel{16}}}{3} \times \frac{5}{\cancel{12}_{3}} = \frac{4 \times 5}{3 \times 3} = \frac{20}{9} = 2\frac{2}{9}$$

$$5\frac{1}{3} \div 2\frac{2}{5} = 2\frac{2}{9}$$

Estimate each quotient.

1. $14\frac{8}{9} \div 5\frac{1}{5}$ _____ **2.** $19\frac{2}{3} \div 3\frac{8}{9}$ _____ **3.** $50\frac{2}{3} \div 2\frac{6}{7}$ _____

4. $5\frac{1}{3} \div 2\frac{2}{3}$ _____ **5.** $6\frac{1}{4} \div 2\frac{1}{2}$ _____ **6.** $9 \div 3\frac{1}{3}$ _____

7. $12 \div 6\frac{1}{2}$ _____ **8.** $5 \div 1\frac{1}{5}$ _____ **9.** $2\frac{7}{10} \div \frac{4}{5}$ _____

10. $6\frac{1}{2} \div 2\frac{1}{6}$ _____ **11.** $5\frac{2}{3} \div 1\frac{3}{4}$ _____ **12.** $5\frac{7}{8} \div 2\frac{1}{2}$ _____

Find each quotient.

13. $2\frac{1}{2} \div \frac{1}{4}$ _____ **14.** $100\frac{1}{8} \div 6\frac{1}{4}$ _____ **15.** $3\frac{2}{3} \div 1\frac{1}{2}$ _____

16. $6\frac{1}{8} \div 2\frac{2}{4}$ _____ **17.** $75\frac{1}{2} \div 5\frac{1}{2}$ _____ **18.** $1\frac{1}{6} \div 2\frac{2}{3}$ _____

19. $10\frac{2}{3} \div 4\frac{1}{3}$ _____ **20.** $18\frac{2}{9} \div 1\frac{1}{2}$ _____ **21.** $1\frac{1}{10} \div 1\frac{5}{6}$ _____

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Reteaching 4-5

Equations with Fractions

You can use mental math to solve addition and subtraction equations that involve fractions or mixed numbers. To solve equations involving fractions with unlike denominators, you need to change the fractions to equivalent fractions with like denominators.

Solve $x - \frac{3}{8} = 2\frac{5}{16}$.

$x - \frac{3}{8} = 2\frac{5}{16}$

$+\frac{3}{8}\ \ +\frac{3}{8}$ Add $\frac{3}{8}$ to each side.

$x = 2\frac{5}{16} + \frac{3}{8}$ Write the sum.

$= 2\frac{5}{16} + \frac{6}{16}$ The LCD is 16. Write $\frac{3}{8}$ as $\frac{6}{16}$.

$= 2\frac{11}{16}$ Simplify.

Solve each equation.

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

What number plus $\frac{1}{5}$ equals $\frac{4}{5}$? _____ So, $x =$ _____.

Show that the equation is true. _____

2. $x - 3\frac{1}{3} = 4\frac{2}{9}$

What is the least common multiple of 3 and 9? _____

Rewrite the equation using like denominators. _____

What number minus $\frac{3}{9}$ equals $\frac{2}{9}$? _____

What number minus 3 equals 4? _____ So, $x =$ _____.

Show that the equation is true. _____

Solve each equation.

3. $\frac{1}{4} + x = \frac{3}{4}$ $x =$ _____

4. $y - \frac{5}{8} = \frac{1}{8}$ $y =$ _____

5. $\frac{7}{10} - c = \frac{2}{5}$ $c =$ _____

6. $\frac{5}{12} + r = \frac{7}{3}$ $r =$ _____

7. $\frac{1}{12} + b = \frac{1}{4}$ $b =$ _____

8. $s - \frac{1}{2} = \frac{1}{6}$ $s =$ _____

9. $d + 5\frac{1}{3} = 8\frac{7}{12}$ $d =$ _____

10. $7\frac{5}{6} - f = \frac{7}{12}$ $f =$ _____

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