Use the rules for finding factors and/or the divisibility rules to help solve these problems.

(1) This week there are 84 campers at Camp Friendship. Circle the number of teams into which the campers can be evenly divided. (Circle all that apply.)

2 3 5 6 9 10

(2) For his game, Pudge has a stack of 145 number cards. Circle the number of even piles Pudge can make.

2 3 5 6 9 10

(3) Christi has between 345 and 355 stamps in her collection. She has them divided evenly into 9 groups. How many stamps does Christi have in her collection?

345 348 351 353

Use the rules for finding factors and/or the divisibility rules to help find factors and the Greatest Common Factor (GCF).

(4) List the factors of 8. _____ _____ _____ _____

(5) List the factors of 12. _____ _____ _____ _____ _____ _____

(6) What is the GCF of 8 and 12? _____

(7) What is $\frac{8}{12}$ written in simplest form? _____

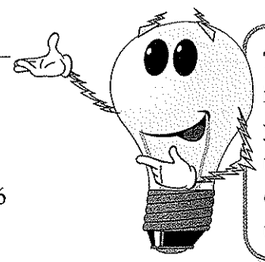
(8) What is the GCF of 3, 6, and 9? _____

(9) Circle the set of numbers that has 6 as a GCF.

18, 21, 24 30, 36, 42 21, 27, 30 2, 3, 6

(10) Circle the set of numbers that has 12 as a GCF.

12, 18, 24 2, 4, 6 24, 36, 48 12, 24, 40



To write a fraction in simplest form, you need to find the GCF of the denominator and the numerator.

(11) Some of the boys helped out in the grocery store on Saturday. The grocer gave each of 3 boys a box of apples and asked them to put the apples into sacks. Booker's box had 42 apples, Ace's box had 36 apples, and Racer's box had 30 apples. If each boy put the same number of apples into individual sacks, what would have been the ***greatest*** possible number of apples in each sack? Hint: Find the GCF. _____

(12) The grocer had 2 boxes of potatoes that needed to be put into plastic bags. Reginald's box had 36 potatoes and Happy's box had 48 potatoes. If each boy put the same number of potatoes into individual plastic bags, what would have been the ***greatest*** possible number of potatoes in each plastic bag? _____

Score this page. ☐	Correct mistakes. ☐	Rescore. ☐

Add. Write your answers in simplest form.

(1) $\frac{2}{3} + \frac{2}{7} + \frac{1}{3}$

(2) $2\frac{3}{4} + 7\frac{5}{6} + 1\frac{1}{2}$

(3) $4\frac{7}{9} + 2\frac{4}{9} + 3\frac{4}{9}$

(4) $3\frac{2}{3} + 5\frac{2}{5}$

(5) $9\frac{3}{10} + 3\frac{5}{6}$

(6) $4\frac{1}{2} + 4\frac{7}{8}$

Subtract. Write your answers in simplest form.

(7) $3\frac{1}{3} - 2\frac{5}{6}$

(8) $12\frac{2}{6} - 8\frac{5}{9}$

(9) $\frac{11}{20} - \frac{3}{20}$

(10) $7\frac{1}{2} - 4\frac{3}{4}$

(11) $7 - 5\frac{6}{15}$

(12) $14\frac{2}{3} - 6\frac{3}{4}$

Solve this problem. Write two number sentences.

(13) After arriving home from school, Ace had $2\frac{3}{4}$ hours before eating the evening meal. After baseball practice, he spent $\frac{5}{12}$ of an hour doing homework, $\frac{1}{4}$ of an hour playing with Wags, and $\frac{3}{4}$ of an hour practicing his trumpet. How long did Ace spend at baseball practice?

Multiply. Be sure your answers are in simplest form.

(1) $\frac{9}{10} \times 4\frac{1}{6} =$

(2) $2\frac{1}{10} \times 1\frac{1}{7} =$

(3) $36 \times \frac{5}{12} =$

(4) $\frac{5}{6} \times \frac{8}{15} =$

(5) $9\frac{3}{4} \times 1\frac{3}{13} =$

(6) $3\frac{1}{9} \times 1\frac{1}{8} =$

(7) $\frac{12}{21} \times \frac{15}{16} =$

(8) $\frac{4}{7} \times 3 =$

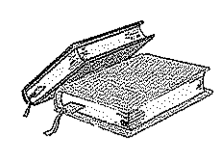
(9) $1\frac{1}{6} \times 7\frac{1}{3} =$

(10) $5\frac{5}{8} \times \frac{4}{9} =$

Solve this problem. Write number sentences.

(11) During the year, the students read 200 library books. Of those, $\frac{2}{5}$ were nonfiction. If $\frac{1}{4}$ of the nonfiction books were books about nature, what fractional part of the books were about nature? ______________________

How many books were about nature? ______________________



Read and fill in the blanks.

(12) __________ ______ ______ __________ . . .
______ ______ ______ *of* *the* *Lord*.

II Corinthians 8:21

Score pages 19 and 20. ☐	Correct mistakes. ☐	Rescore. ☐

Multiply.

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

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

(3) $\frac{1}{6} \times \frac{6}{1} =$

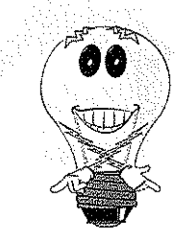
In each of the multiplication sentences above, the second fraction is the **reciprocal** (rĭ·sĭp′rə·kəl) of the first.

When a fraction and its **reciprocal** are multiplied, **their product equals 1**.

Let's look again at the three multiplication sentences. As you read, fill in the answers.

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

(4) In each multiplication sentence, the numerator of the first fraction is the same as the ______________ of the second fraction, and the denominator of the first fraction is the same as the ______________ of the second fraction.



$\frac{1}{6}$ $\frac{6}{1}$

As you can see, we find the **reciprocal** by reversing, or switching, the numerator and the denominator.

The **reciprocal** of $\frac{3}{4}$ is $\frac{4}{3}$. (5) Does $\frac{3}{4} \times \frac{4}{3} = 1$? __________

The **reciprocal** of $\frac{1}{6}$ is $\frac{6}{1}$. (6) Does $\frac{1}{6} \times \frac{6}{1} = 1$? __________

Write the reciprocal of each of these fractions and whole numbers. Write each whole number as a fraction by writing the whole number over the denominator 1.

(7) $\frac{7}{9}$ $\frac{9}{7}$

(8) $\frac{6}{1}$ $\frac{1}{6}$

(9) $\frac{5}{12}$ __________

(10) $\frac{1}{8}$ __________

(11) $\frac{2}{3}$ __________

(12) $\frac{1}{4}$ __________

(13) 5 __________

(14) $\frac{1}{2}$ __________

(15) 10 __________

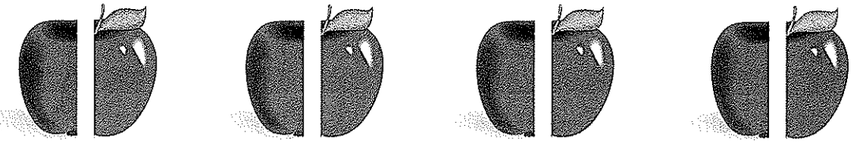
(16) $\frac{3}{5}$ __________

(17) 4 __________

(18) $\frac{5}{6}$ __________

Score this page. ☐	Correct mistakes. ☐	Rescore. ☐

As you read, fill in the blanks.



I have 4 apples to share with my friends. How many pieces can I share if each apple is divided in half?

(1) $4 \div \frac{1}{2} =$ _____

If each of the 4 apples is divided into 2 equal pieces, how many pieces can I share?

(2) $4 \times 2 =$ _____

You should have written the same answer on both blanks above because these two number sentences are equal.

Divisor			Reciprocal of Divisor		
$\frac{4}{1}$	$\div \frac{1}{2}$	$=$	$\frac{4}{1}$	$\times \frac{2}{1}$	$= 8$

If we divide by a fractional **divisor**, or if we multiply by its **reciprocal**, we get the same answer.

To divide by a fraction, we multiply by its reciprocal.

Let's try that again. Read carefully and then finish the problem.

First we write the equivalent multiplication sentence that shows multiplying by the reciprocal of the divisor.

$6 \div \frac{3}{8} = \frac{6}{1} \times \frac{8}{3} = \square$

(3) Now you multiply using cancellation. Write your answer in simplest form.

Find each answer by multiplying by the reciprocal of the divisor. Use cancellation. Remember to write each whole number as a fraction by writing the whole number over the denominator 1.

(4) $8 \div \frac{2}{5} =$

(5) $18 \div \frac{9}{10} =$

(6) $24 \div \frac{3}{4} =$

Score this page.	Correct mistakes.	Rescore.

Divide by multiplying by the reciprocal of the divisor. Use cancellation.

(1) $12 \div \frac{4}{5} = \frac{\overset{3}{\cancel{12}}}{1} \times \frac{5}{\underset{1}{\cancel{4}}} = 15$

(2) $40 \div \frac{8}{9} =$

(3) $30 \div \frac{5}{6} =$

(4) $36 \div \frac{6}{7} =$

(5) $21 \div \frac{3}{7} =$

(6) $35 \div \frac{7}{9} =$

The answers to activities (1)–(6) were whole numbers. However, when we divide a whole number by a fractional divisor, the answer is *not* always a whole number.

Divide by multiplying by the reciprocal of the divisor. Use cancellation, and be sure your answers are in simplest form.

(7) $10 \div \frac{6}{7} = \frac{\overset{5}{\cancel{10}}}{1} \times \frac{7}{\underset{3}{\cancel{6}}} = \frac{35}{3} = 11\frac{2}{3}$

(8) $4 \div \frac{8}{9} =$

(9) $2 \div \frac{7}{9} =$

(10) $8 \div \frac{3}{4} =$

(11) $3 \div \frac{12}{13} =$

(12) $9 \div \frac{6}{7} =$

Score.	Correct mistakes.	Rescore.

Divide by multiplying by the reciprocal of the divisor. Use cancellation, and be sure your answers are in simplest form.

(13) $25 \div \frac{5}{6} =$

(14) $6 \div \frac{9}{10} =$

(15) $8 \div \frac{10}{11} =$

(16) $22 \div \frac{11}{12} =$

(17) $5 \div \frac{2}{3} =$

(18) $48 \div \frac{8}{9} =$

Score.	Correct mistakes.	Rescore.

Supervisor initial _____ Please check student's understanding of dividing a whole number by a fraction. He may need to read the material on page 22 aloud to you.