

Name _____

Date _____

Changing Mixed Numbers to Improper Fractions

Change the following mixed numbers to improper fractions.

1. $3 \frac{4}{5}$

$2 \frac{3}{8}$

$1 \frac{5}{12}$

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

$5 \frac{3}{4}$

$8 \frac{1}{9}$

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

$6 \frac{1}{2}$

$12 \frac{5}{9}$

4. $7 \frac{1}{8}$

$1 \frac{5}{7}$

$4 \frac{8}{11}$

5. $6 \frac{3}{7}$

$3 \frac{2}{5}$

$7 \frac{11}{12}$

6. $6 \frac{7}{8}$

$2 \frac{7}{12}$

$5 \frac{3}{10}$



Changing Improper Fractions to Mixed Numbers

Change the improper fractions to mixed or whole numbers.

1. $\frac{5}{4}$ $\frac{7}{2}$ $\frac{6}{5}$

2. $\frac{8}{3}$ $\frac{9}{2}$ $\frac{12}{5}$

3. $\frac{9}{5}$ $\frac{62}{7}$ $\frac{14}{3}$

4. $\frac{12}{5}$ $\frac{80}{10}$ $\frac{89}{12}$

5. $\frac{10}{3}$ $\frac{71}{9}$ $\frac{61}{6}$

6. $\frac{13}{2}$ $\frac{54}{5}$ $\frac{9}{7}$

7. $\frac{49}{12}$ $\frac{100}{10}$ $\frac{82}{11}$

8. $\frac{47}{12}$ $\frac{58}{9}$ $\frac{97}{10}$



aming Fractions

$$\frac{2}{5} = \frac{\quad}{15}$$

→

$$4 = \frac{\quad}{2} \text{ Think of 4 as } \frac{4}{1}$$

$$\frac{4}{1} = \frac{\quad}{2}$$

→

$$\text{So, } \frac{4}{1} = \frac{4 \times 2}{1 \times 2} = \frac{8}{2}$$



$$\text{So, } \frac{2}{5} = \frac{2 \times 3}{5 \times 3} = \frac{6}{15}$$

Rewrite each fraction using the denominator given.

1. $\frac{1}{2} = \frac{\quad}{8}$

$\frac{2}{3} = \frac{\quad}{30}$

$\frac{3}{4} = \frac{\quad}{20}$

2. $\frac{3}{5} = \frac{\quad}{15}$

$\frac{1}{5} = \frac{\quad}{50}$

$\frac{11}{12} = \frac{\quad}{48}$

3. $\frac{1}{4} = \frac{\quad}{12}$

$\frac{4}{9} = \frac{\quad}{81}$

$\frac{5}{9} = \frac{\quad}{18}$

4. $\frac{1}{3} = \frac{\quad}{15}$

$\frac{2}{7} = \frac{\quad}{21}$

$\frac{3}{4} = \frac{\quad}{16}$



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Simplifying Fractions

Simplify.

1. $\frac{15}{30}$ $\frac{55}{66}$ $\frac{16}{48}$

2. $\frac{10}{24}$ $\frac{6}{72}$ $\frac{24}{36}$

3. $\frac{10}{35}$ $\frac{2}{18}$ $\frac{8}{24}$

4. $\frac{4}{8}$ $\frac{54}{54}$ $\frac{9}{27}$

5. $\frac{7}{21}$ $\frac{15}{25}$ $\frac{25}{50}$

6. $\frac{6}{18}$ $\frac{9}{12}$ $\frac{2}{16}$

7. $\frac{18}{27}$ $\frac{14}{40}$ $\frac{9}{18}$

8. $\frac{6}{15}$ $\frac{12}{36}$ $\frac{6}{9}$

MULTIPLYING FRACTIONS BY WHOLE NUMBERS

When multiplying a whole number and a fraction:

$$\begin{aligned} 8 \times \frac{3}{8} &= \frac{8}{1} \times \frac{3}{8} \\ &= \frac{8 \times 3}{1 \times 8} \\ &= \frac{24}{8} \\ &= 3 \end{aligned}$$

1. Rewrite the whole number as a fraction. (Write a denominator of 1.)
2. Multiply the numerators.
3. Multiply the denominators.
4. Simplify if possible.

$$\begin{aligned} \frac{3}{4} \times 6 &= \frac{3}{4} \times \frac{6}{1} \\ &= \frac{3 \times 6}{4 \times 1} \\ &= \frac{18}{4} \\ &= 4 \frac{2}{4} = 4 \frac{1}{2} \end{aligned}$$

Solve each problem. Simplify if possible.

A. $3 \times \frac{2}{3} =$

$\frac{4}{5} \times 2 =$

$1 \times \frac{6}{7} =$

$2 \times \frac{4}{7} =$

B. $\frac{2}{5} \times 6 =$

$3 \times \frac{3}{10} =$

$9 \times \frac{3}{4} =$

$6 \times \frac{3}{10} =$

C. $8 \times \frac{1}{6} =$

$2 \times \frac{6}{7} =$

$6 \times \frac{1}{10} =$

$\frac{3}{8} \times 4 =$

D. $\frac{3}{10} \times 5 =$

$5 \times \frac{2}{9} =$

$\frac{3}{7} \times 2 =$

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

Multiplying Fractions

Multiply. Simplify if possible.



$$\begin{aligned}\frac{1}{3} \times \frac{3}{8} &= \frac{1 \times 3}{3 \times 8} \\ &= \frac{3}{24} \\ &= \frac{1}{8}\end{aligned}$$

When multiplying fractions:

1. Multiply the numerators.
2. Multiply the denominators.
3. Simplify if possible.

$$\begin{aligned}\frac{3}{4} \times \frac{4}{5} &= \frac{3 \times 4}{4 \times 5} \\ &= \frac{12}{20} \\ &= \frac{3}{5}\end{aligned}$$

1. $\frac{3}{8} \times \frac{2}{3} =$

$\frac{4}{5} \times \frac{1}{2} =$

$\frac{1}{3} \times \frac{6}{7} =$

$\frac{1}{2} \times \frac{4}{7} =$

2. $\frac{2}{3} \times \frac{5}{6} =$

$\frac{1}{3} \times \frac{3}{10} =$

$\frac{4}{9} \times \frac{3}{4} =$

$\frac{5}{6} \times \frac{3}{10} =$

3. $\frac{3}{8} \times \frac{1}{6} =$

$\frac{2}{3} \times \frac{6}{7} =$

$\frac{5}{6} \times \frac{1}{10} =$

$\frac{3}{8} \times \frac{4}{9} =$

4. $\frac{3}{10} \times \frac{5}{8} =$

$\frac{3}{5} \times \frac{2}{9} =$

$\frac{3}{7} \times \frac{2}{3} =$

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

5. $\frac{1}{2} \times \frac{2}{7} =$

$\frac{5}{8} \times \frac{2}{5} =$

$\frac{5}{6} \times \frac{2}{5} =$

$\frac{2}{5} \times \frac{1}{2} =$



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Multiplying Fractions

Multiply. Simplify if possible.

1. $\frac{3}{8} \times \frac{1}{6} =$

$\frac{4}{5} \times \frac{1}{4} =$

$\frac{1}{2} \times \frac{6}{7} =$

$\frac{1}{4} \times \frac{4}{7} =$

2. $\frac{1}{3} \times \frac{6}{11} =$

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

$\frac{2}{9} \times \frac{3}{4} =$

$\frac{5}{9} \times \frac{3}{5} =$

3. $\frac{4}{9} \times \frac{1}{6} =$

$\frac{1}{6} \times \frac{6}{7} =$

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

$\frac{5}{6} \times \frac{4}{9} =$

4. $\frac{2}{3} \times \frac{6}{7} =$

$\frac{1}{4} \times \frac{2}{5} =$

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

$\frac{1}{3} \times \frac{3}{5} =$

5. $\frac{5}{9} \times \frac{3}{10} =$

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

$\frac{5}{8} \times \frac{2}{5} =$

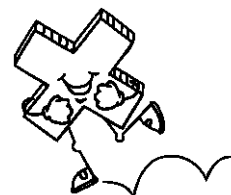
$\frac{7}{8} \times \frac{5}{7} =$

6. $\frac{8}{15} \times \frac{5}{8} =$

$\frac{11}{12} \times \frac{6}{7} =$

$\frac{3}{10} \times \frac{5}{7} =$

$\frac{5}{12} \times \frac{3}{10} =$



SUBTRACTING FRACTIONS WITH UNLIKE DENOMINATORS

When subtracting fractions with unlike denominators:

$$\begin{array}{r} \frac{3}{4} \rightarrow \frac{3 \times 3}{4 \times 3} \rightarrow \frac{9}{12} \\ - \frac{1}{6} \rightarrow \frac{1 \times 2}{6 \times 2} \rightarrow \frac{2}{12} \\ \hline \frac{7}{12} \end{array}$$

1. Find the least common denominator.
2. Rewrite fractions using the LCD.
3. Subtract.
4. Simplify if possible.

$$\begin{array}{r} \frac{7}{12} \longrightarrow \frac{7}{12} \\ - \frac{1}{4} \rightarrow \frac{1 \times 3}{4 \times 3} \rightarrow \frac{3}{12} \\ \hline \frac{4}{12} = \frac{1}{3} \end{array}$$

Solve each problem. Simplify if possible.

A.

$\frac{3}{4}$	$\frac{7}{9}$	$\frac{1}{2}$	$\frac{2}{3}$
$-\frac{7}{10}$	$-\frac{1}{6}$	$-\frac{3}{8}$	$-\frac{2}{9}$
<hr/>	<hr/>	<hr/>	<hr/>

B.

$\frac{7}{12}$	$\frac{7}{10}$	$\frac{3}{4}$	$\frac{3}{10}$
$-\frac{1}{4}$	$-\frac{1}{2}$	$-\frac{3}{8}$	$-\frac{1}{5}$
<hr/>	<hr/>	<hr/>	<hr/>

C.

$\frac{5}{8}$	$\frac{5}{6}$	$\frac{3}{4}$	$\frac{7}{8}$
$-\frac{1}{6}$	$-\frac{3}{10}$	$-\frac{1}{6}$	$-\frac{5}{6}$
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SUBTRACTING FRACTIONS WITH UNLIKE DENOMINATORS

Solve each problem. Simplify if possible.

$$\begin{array}{r} \text{A.} \quad \frac{1}{2} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{5} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{5} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \text{B.} \quad \frac{3}{4} \\ - \frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{2} \\ - \frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{2} \\ - \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{8} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \text{C.} \quad \frac{5}{8} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{5} \\ - \frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ - \frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ - \frac{4}{9} \\ \hline \end{array}$$

$$\begin{array}{r} \text{D.} \quad \frac{5}{8} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{11}{12} \\ - \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \text{E.} \quad \frac{2}{3} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ - \frac{2}{5} \\ \hline \end{array}$$

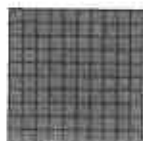
$$\begin{array}{r} \frac{5}{12} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{5} \\ - \frac{2}{3} \\ \hline \end{array}$$

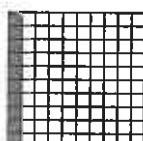
Name _____

Decimals

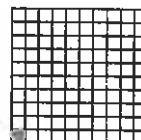
A **decimal** is a number that includes a period called a **decimal point**. The digits to the right of the decimal point are a value less than one.



one whole



one tenth



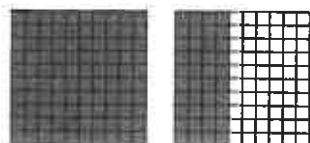
one hundredth

The place value chart below helps explain decimals.

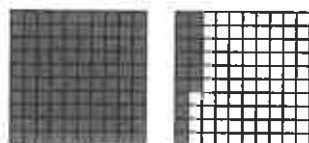
hundreds	tens	ones	tenths	hundredths	thousandths
6	3	2	. 4		
	4	7	. 0	5	
		8	. 0	0	9

A decimal point is read as "and." The first number, 632.4, is read as "six hundred thirty-two and four tenths." The second number, 47.05, is read as "forty-seven and five hundredths." The third number, 8.009, is read as "eight and nine thousandths."

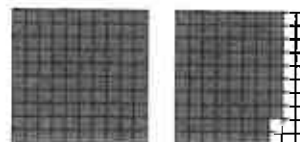
Directions: Write the decimals shown below. Two have been done for you.



1. 1.4



2. _____



3. _____

4. six and five tenths 6.5
5. twenty-two and nine tenths _____
6. thirty-six and fourteen hundredths _____
7. forty-seven hundredths _____
8. one hundred six and four tenths _____
9. seven and three hundredths _____
10. one tenth less than 0.6 _____
11. one hundredth less than 0.34 _____
12. one tenth more than 0.2 _____

READING DECIMALS

Just like there are place value names for numbers larger than 0, there are also names for place values after the decimal point.

thousands	hundreds	tens	ones	.	tenths	hundredths	thousandths
1	2	4	5	.	1	7	6

Decimal	Read As	Equivalent Fraction
0.7	seven tenths	$\frac{7}{10}$
0.23	twenty-three hundredths	$\frac{23}{100}$
0.045	forty-five thousandths	$\frac{45}{1000}$
15.01	fifteen and one hundredth	$15\frac{1}{100}$

Hint:
"and" separates
the whole number
from the fraction.

Fill in each blank with the correct equivalent.

	Decimal	Read As	Equivalent Fraction
A.	0.3	three-tenths	_____
B.	1.12	_____	_____
C.	_____	two hundred twenty-one thousandths	_____
D.	_____	_____	$\frac{53}{100}$
E.	0.871	_____	_____
F.	_____	_____	$\frac{5}{100}$
G.	0.783	_____	_____
H.	_____	two and six tenths	_____
I.	_____	_____	$\frac{115}{1000}$

Comparing Decimals

Put the correct sign (>, <, =) in each problem.

Comparing decimals is similar to comparing whole numbers.

1. Line up the numbers by place value.
2. Compare the digits left to right.

Example 1 $0.08 \bigcirc 0.8$

1. Line up:

0.08
0.8

2. Compare.

After the decimal point, you have a 0 and an 8. 8 is bigger than 0, so 0.8 is bigger.

$0.08 < 0.8$



Example 2 $11.13 \bigcirc 11.03$

11.13
11.03

The 11's before the decimal point are the same. After the decimal point, is 1 or 0 bigger? 1 is.

$11.13 > 11.03$

1. $0.007 \bigcirc 0.07$

2. $2.159 \bigcirc 2.259$

3. $10.05 \bigcirc 10.005$

4. $0.99 \bigcirc .009$

5. $30.249 \bigcirc 30.429$

6. $0.004 \bigcirc 4.00$

7. $6.041 \bigcirc 6.401$

8. $92.001 \bigcirc 92.001$

9. $263.08 \bigcirc 263.81$

10. $0.08 \bigcirc 0.8$

11. $101.05 \bigcirc 101.005$

12. $9.50 \bigcirc 7.05$

13. $214.01 \bigcirc 214.001$

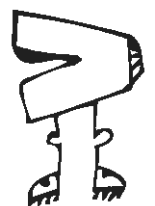
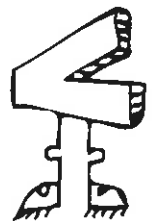
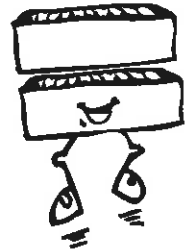
14. $9.008 \bigcirc 9.08$

15. $614.05 \bigcirc 614.05$

16. $8.26 \bigcirc 8.026$

17. $43.014 \bigcirc 43.104$

18. $0.83 \bigcirc 0.63$



COMPARING AND ORDERING DECIMALS

Write the prices on the menu in order from least to greatest.

A. \$1.25 \$2.03 \$1.07 \$2.51 \$1.10 \$2.15 \$2.21 \$1.05

Item:	Price:
Soda	
Milk	
Fries	
Salad	
Cheese Sandwich	
Tuna Sandwich	
Hamburger	
Cheeseburger	

Circle the largest decimal in each row.

B. 4.05 4.50 4.005 4.15 4.55 4.5

C. 10.57 10.49 10.005 10.057 10.75 10.094

D. 2.5 2.15 2.52 2.005 2.095 2.51

E. 1.8 1.84 1.48 1.847 1.75 1.5

F. 89.90 88.19 8.90 89.09 89.5 89.01



Adding and Subtracting Decimals

When adding or subtracting decimals, place the decimal points under each other. That way, you add tenths to tenths, for example, not tenths to hundredths. Add or subtract beginning on the right, as usual. Carry or borrow numbers in the same way. Adding 0 to the end of decimals does not change their value, but sometimes makes them easier to add and subtract.

Examples:	$\begin{array}{r} 39.40 \\ + 6.81 \\ \hline 46.21 \end{array}$	$\begin{array}{r} 0.064 \\ + 0.470 \\ \hline 0.534 \end{array}$	$\begin{array}{r} 3.56 \\ - 0.09 \\ \hline 3.47 \end{array}$	$\begin{array}{r} 6.83 \\ - 2.14 \\ \hline 4.69 \end{array}$
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Directions: Solve the following problems.

1. Write each set of numbers in a column and add them.

a. $2.56 + 0.6 + 76 =$ _____

b. $93.5 + 23.06 + 1.45 =$ _____

c. $3.23 + 91.34 + 0.85 =$ _____

2. Write each pair of numbers in a column and subtract them.

A. $7.89 - 0.56 =$ _____ B. $34.56 - 6.04 =$ _____ C. $7.6 - 3.24 =$ _____

3. In a relay race, Alice ran her part in 23.6 seconds, Cindy did hers in 24.7 seconds, and Erin took 20.09 seconds. How many seconds did they take altogether? _____

4. Although Erin ran her part in 20.09 seconds today, yesterday it took her 21.55 seconds. How much faster was she today? _____

5. Add this grocery bill:

potatoes—\$3.49; milk—\$2.09; bread—\$0.99; apples—\$2.30

6. A yellow coat cost \$47.59, and a blue coat cost \$36.79. How much more did the yellow coat cost? _____

7. A box of Oat Boats cereal has 14.6 ounces. A box of Sugar Circles has 17.85 ounces. How much more cereal is in the Sugar Circles box? _____

8. The Oat Boats cereal has 4.03 ounces of sugar in it. Sugar Circles cereal has only 3.76 ounces. How much more sugar is in a box of Oats Boats? _____

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Multiplying Decimals

Steps:

1. Ignore the decimal point, and multiply as with whole numbers.
2. Count the number of decimal places in both factors.
3. Place the decimal point that many places from the right in the product.

Example:

$$\begin{array}{r} 0.46 \longrightarrow 2 \text{ decimal places} \\ \times 0.9 \longrightarrow 1 \text{ decimal place} \\ \hline 0.414 \longrightarrow 3 \text{ decimal places} \end{array}$$



Directions: Multiply. Show your work in the space below.

1.2×0.4 _____ 0.5×0.1 _____ 1.1×0.73 _____

0.6×0.3 _____ 1.5×0.4 _____ 14.5×0.23 _____

2.4×1.8 _____ 0.82×0.2 _____ 0.09×0.4 _____

Dividing Decimals by Decimals

When a divisor has a decimal, eliminate it before dividing. If there is one digit right of the decimal in the divisor, multiply the divisor and dividend by 10. If there are two digits right of the decimal in the divisor, multiply the divisor and dividend by 100.

Multiply the divisor and dividend by the same number whether or not the dividend has a decimal. The goal is to have a divisor with no decimal.

Examples: $2.3 \overline{)89} \times 10 = 23 \overline{)890}$ $4.11 \overline{)67.7} \times 100 = 411 \overline{)6,770}$
 $4.9 \overline{)35.67} \times 10 = 49 \overline{)356.7}$ $0.34 \overline{)789} \times 100 = 34 \overline{)78,900}$

After removing the decimal from the divisor, work the problem in the usual way.

Directions: Solve the following problems.

1. $3.5 \overline{)10.15}$

2. $6.7 \overline{)415.4}$

3. $0.21 \overline{)924}$

4. $73 \overline{)50.37}$

5. The body can burn only 0.00015 of an ounce of alcohol an hour. If an average-sized person has 1 drink, his/her blood alcohol concentration (BAC) is 0.0003. How many hours will it take his/her body to remove that much alcohol from the blood? _____

6. If the same person has 2 drinks in 1 hour, his/her blood alcohol concentration increases to 0.0006. Burning 0.00015 ounce of alcohol an hour, how many hours will it take that person's body to burn off 2 drinks? _____

7. If someone has 3 drinks in 1 hour, the blood alcohol concentration rises to 0.0009. At 0.00015 an hour, how many hours will it take to burn off 3 drinks? _____

8. After a drunk driving conviction, the driver's car insurance can increase by as much as \$2,000. Still, this is only 0.57 of the total cost of the conviction. What is the total cost, in round numbers? _____

9. In Ohio in 1986, about 335 fatal car crashes were alcohol related. That was 0.47 of the total number of fatal car crashes. About how many crashes were there altogether, in round numbers? _____



EQUIVALENT DECIMALS AND FRACTIONS

Study how to rewrite decimals and fractions.

$$\frac{4}{10} = 0.4$$

$$5.78 = 5\frac{78}{100}$$

$$5\frac{874}{1000} = 5.874$$

$$1.521 = 1\frac{521}{1000}$$

Write each fraction or mixed number as a decimal.

A. $5\frac{78}{100} =$

$$\frac{23}{100} =$$

B. $1\frac{3}{100} =$

$$\frac{5}{10} =$$

C. $\frac{548}{1000} =$

$$2\frac{53}{100} =$$

D. $53\frac{17}{100} =$

$$16\frac{303}{1000} =$$

E. $\frac{91}{1000} =$

$$91\frac{3}{10} =$$

Write each decimal as a mixed number or fraction.

F. $2.87 =$

$$0.983 =$$

G. $14.5 =$

$$287.69 =$$

H. $1.752 =$

$$0.7 =$$

I. $0.06 =$

$$10.054 =$$

J. $81.2 =$

$$0.157 =$$

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Exercise 2.13

Write the mathematical expression for each and solve.

1. Divide 13.364 by 0.26.
2. Find the quotient of 27.48 and 6.
3. How many equal groups of 0.45 are there in 3.87?
4. You have 45.44 grams and share it equally with 8 students. How much does each student have?
5. Divide $\frac{4}{8}$ by $\frac{2}{7}$.
6. What is the quotient of $\frac{17}{80}$ and $\frac{1}{4}$?
7. How many equal groups of $\frac{4}{8}$ are there in 20?

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Exercise 2.6

Write the mathematical expression for each and solve.

1. What is the difference between $\frac{7}{12}$ and $\frac{5}{16}$?

2. How much more is $\frac{2}{3}$ than $\frac{1}{4}$?

3. How much less is $\frac{3}{14}$ than $\frac{11}{13}$?

4. Subtract $\frac{3}{8}$ from $\frac{6}{7}$.

5. How much more do you need to go from $\frac{1}{7}$ to $\frac{6}{8}$?

6. What amount is needed to go from $\frac{5}{14}$ to $\frac{5}{8}$?

Name _____

What's the Sign?

Directions: Insert the correct signs (+, -, x, ÷) to make each problem correct.



$11 + 1 = 6 \times 2$

$10 \div 2 = 3 + 2$

$24 \quad 6 = 6 \quad 3$

$15 \quad 5 = 3 \quad 1$

$36 \quad 12 = 4 \quad 20$

$4 \quad 5 = 16 \quad 4$

$2 \quad 2 = 16 \quad 4$

$48 \quad 8 = 3 \quad 2$

$-5 \quad 5 = 4 \quad 4$

$64 \quad 8 = 32 \quad 4$

$1 \quad 7 = 56 \quad 7$

$5 \quad 5 = 0 \quad 4$

$8 \times 3 \quad 3 = 9 \quad 3$

$14 \quad 7 = 1 \quad 1$

$1 \quad 1 = 1 \quad 1$

Name _____ Date _____

Exercise 2.9

The word OF in a mathematical expression usually indicates that we need to multiply. For example, taking $\frac{1}{2}$ of 30 means $\frac{1}{2} \times 30$, which is 15. Taking 40% of 20 means 0.40×20 , which is 8.

Remember: When you change a percentage to a decimal, you move the decimal point two places to the left. Also, you do NOT need a common denominator when multiplying fractions!

Write each phrase as a mathematical expression. Ask your teacher if you are to go ahead and solve the problem.

1. 35% of 80

2. 40% of 60

3. 28% of 50

4. 30% of 90

5. 54% of 160

6. 76% of 300

7. $\frac{1}{3}$ of 63

8. $\frac{1}{5}$ of 75

9. $\frac{3}{4}$ of 60

10. $\frac{2}{7}$ of 77

11. $\frac{5}{8}$ of 48

12. $\frac{1}{8}$ of 56

Name _____ Date _____

Exercise 4.7

Use estimation to decide if each situation is reasonable or not. Explain your answers.

Bowling Alley Prices

Games	\$1.75 each
Shoe rental	\$1.50
Drinks	sm. 50¢ lg. \$1.00
All snack items	75¢ each

1. Gabe has time to rent shoes and bowl only one game. Dad gives him a \$5 bill. The clerk gives him less than a dollar in change.

2. Clint, Devlin, and Ray each have \$10.00. Each plans to bowl three games, rent shoes, and have a large drink and two snacks.

3. Chelten rents shoes and bowls three games. She decides to treat Chelsi, Addie, and herself to small drinks. Chelten started out with \$10.00.

4. Lance and Uncle Chaddrick challenge Marli and Aunt Paige to bowl three games. All four need to rent shoes. The losing team will buy large drinks for everyone. Each team has \$20.00.
