

4th Grade

Summer Math Packet



Name _____

Dear incoming 4th grade students,

We are very excited to have you as students next year. In order to help you be better prepared for 4th grade math, we have prepared a math packet for you to complete over the summer. Please use the packet as follows:

The front page (reteaching page) in each lesson explains a concept and has problems completed for you to use as examples. The back of each page (practice page) is for you to use that concept and complete. If you need to use scrap paper to show your work, just staple that to the back of your packet. This will help to prepare you for concepts that you will see in 4th grade. This packet will be due the first day we return to school.

Make sure to **PRACTICE** those multiplication facts...you will need them this year!

Have a great summer.

See you in August,

Miss Bright & Mrs. Schiro

Name _____

Arrays and Multiplying by 10 and 100

You can use addition to help you multiply.

Find 2×10 .



There are two groups of 10.

Add 10 two times.

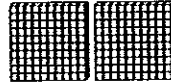
$$10 + 10 = 20$$

or

Multiply 2 groups of 10.

$$2 \times 10 = 20$$

Find 2×100 .



There are two groups of 100.

Add 100 two times.

$$100 + 100 = 200$$

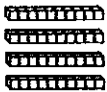
or

Multiply 2 groups of 100.

$$2 \times 100 = 200$$

Find each product.

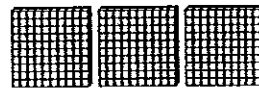
1. Find 4×10 .



$$\text{Add: } 10 + 10 + 10 + 10 = \underline{40}$$

$$\text{So, } 4 \times 10 = \underline{40}$$

2. Find 3×100 .



$$\text{Add: } 100 + 100 + 100 = \underline{300}$$

$$\text{So, } 3 \times 100 = \underline{300}$$

3. **Reasonableness** Michael used addition to find 8×100 and he said the product is 80. What did he do wrong?

Sample answer: Michael added by 10s instead of by 100s.

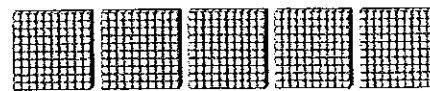
4. Draw two sets of arrays to represent 6×10 and 5×100 . Then show how to use addition and multiplication to find each product.



$$10 + 10 + 10 + 10$$

$$+ 10 + 10 = 60$$

$$6 \times 10 = 60$$



$$100 + 100 + 100$$

$$+ 100 + 100 = 500$$

$$5 \times 100 = 500$$

Name _____

Step-Up 1

Practice

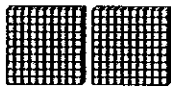
Arrays and Multiplying by 10 and 100

Find each product.

1. $4 \times 10 =$ _____



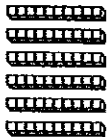
2. $2 \times 100 =$ _____



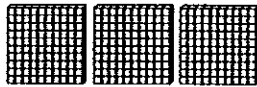
3. $2 \times 10 =$ _____



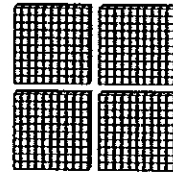
4. $6 \times 10 =$ _____



5. $3 \times 100 =$ _____



6. $4 \times 100 =$ _____



7. **Reason** What whole number could you use to complete

$\square \times 100 = \square 00$ so that $\square 00$ is greater than 500 but less than 700?

8. Mr. Mitchell does 100 sit-ups every morning. How many sit-ups will he do in 9 days?

A 90

B 100

C 109

D 900

9. Jackie has 10 groups of pennies with 3 pennies in each group. Carlos has 5 groups of pennies with 100 pennies in each group. Who has more pennies? Explain how you know.


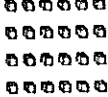
Name _____

Breaking Apart Arrays

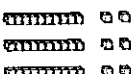
You can use arrays of place-value blocks to multiply.

Find the product for 4×16 .


What You Show

	
$4 \times 10 = 40$	$4 \times 6 = 24$
$40 + 24 = 64$	

Use the array to find the partial products and the product.

1. 

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

2. 

$$\begin{array}{r} 22 \\ \times 6 \\ \hline 132 \end{array}$$

Complete the calculation.

3.
$$\begin{array}{r} 15 \\ \times 4 \\ \hline 60 \end{array}$$

4.
$$\begin{array}{r} 22 \\ \times 4 \\ \hline 88 \end{array}$$

5.
$$\begin{array}{r} 14 \\ \times 6 \\ \hline 84 \end{array}$$

6.
$$\begin{array}{r} 16 \\ \times 6 \\ \hline 96 \end{array}$$

7.
$$\begin{array}{r} 12 \\ \times 5 \\ \hline 60 \end{array}$$

8.
$$\begin{array}{r} 13 \\ \times 4 \\ \hline 52 \end{array}$$

9.
$$\begin{array}{r} 15 \\ \times 5 \\ \hline 75 \end{array}$$

10.
$$\begin{array}{r} 16 \\ \times 7 \\ \hline 112 \end{array}$$

11. **Reason** What two simpler problems can you use to find 4×22 ?
(Hint: Think about tens and ones.)

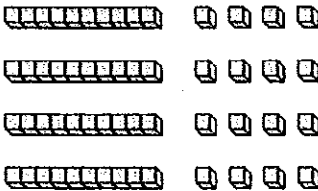
4×20 and 4×2


Name _____

Breaking Apart Arrays

Use the array to find the partial products and the product.

Complete the calculation.

1. 
$$\begin{array}{r} 14 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$$

2. 
$$\begin{array}{r} 12 \\ \times 5 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$$

3.
$$\begin{array}{r} 17 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$$

4.
$$\begin{array}{r} 25 \\ \times 3 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$$

5.
$$\begin{array}{r} 21 \\ \times 4 \\ \hline \square \square \\ + \square \square \\ \hline \square \square \end{array}$$

6. $4 \times 17 =$ _____ 7. $5 \times 24 =$ _____ 8. $3 \times 18 =$ _____

9. $5 \times 29 =$ _____ 10. $23 \times 3 =$ _____ 11. $21 \times 6 =$ _____

12. Clyde planted 4 rows of tomato seeds. Each row has 12 seeds. How many tomato seeds did Clyde plant? _____

13. Find 7×22 .

- A 54 B 144 C 152 D 154


14. Write a description of an array of stickers using the product of 3×15 .

Name _____

Using an Expanded Algorithm

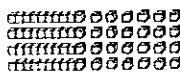
You can use arrays of place-value blocks to multiply.

Find the product for 4×14 .

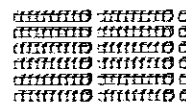
What You Show	What You Write
$4 \times 10 = 40$ $4 \times 4 = 16$ $40 + 16 = 56$ 	$\begin{array}{r} 14 \\ \times 4 \\ \hline 16 \\ +40 \\ \hline 56 \end{array}$ <p>4 X 4 ones 4 X 1 ten</p>

Draw an array for each problem to find the partial products and the product. Complete the calculation.

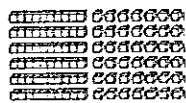
1.
$$\begin{array}{r} 16 \\ \times 4 \\ \hline 64 \end{array}$$



2.
$$\begin{array}{r} 21 \\ \times 6 \\ \hline 126 \end{array}$$



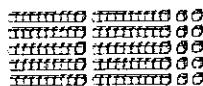
3.
$$\begin{array}{r} 17 \\ \times 6 \\ \hline 102 \end{array}$$



4.
$$\begin{array}{r} 13 \\ \times 2 \\ \hline 26 \end{array}$$



5.
$$\begin{array}{r} 22 \\ \times 5 \\ \hline 110 \end{array}$$



6.
$$\begin{array}{r} 14 \\ \times 3 \\ \hline 42 \end{array}$$



7. Reason What two simpler problems can you use to find 7×38 ?
(Hint: Think about the tens and ones.)

7×30 and 7×8

Name _____

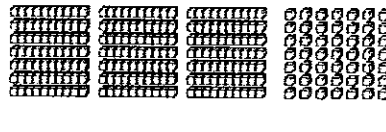
Step-Up 3

Practice

Using an Expanded Algorithm

Use the array to find the partial products. Add the partial products to find the product.

1.
$$\begin{array}{r} 42 \\ \times 6 \\ \hline \end{array}$$


2.
$$\begin{array}{r} 37 \\ \times 7 \\ \hline \end{array}$$


3.
$$\begin{array}{r} 21 \\ \times 4 \\ \hline \end{array}$$


4.
$$\begin{array}{r} 35 \\ \times 4 \\ \hline \end{array}$$


5. $8 \times 14 =$ _____

6. $5 \times 52 =$ _____

7. $8 \times 42 =$ _____

8. $7 \times 26 =$ _____

9. $4 \times 62 =$ _____

10. $9 \times 76 =$ _____

11. Rodney can type 62 words per minute. How many words can Rodney type in 5 minutes? _____

12. Find 8×34 .

A 172

B 262

C 272

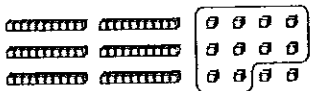
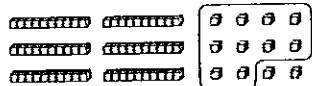
D 372

13. Explain how you can use an array to find partial products and the product for 6×36 .

Name _____

Multiplying 2-Digit by 1-Digit Numbers

Here is how to multiply a 2-digit number by a 1-digit number using paper and pencil.

Find 3×24 .	What You Think	What You Write
Step 1 Multiply the ones. Regroup if necessary.	 <p>$3 \times 4 = 12$ ones Regroup 12 ones as 1 ten 2 ones.</p>	$\begin{array}{r} 1 \\ 24 \\ \times 3 \\ \hline 72 \end{array}$
Step 2 Multiply the tens. Add any extra tens.	 <p>3×2 tens = 6 tens 6 tens + 1 ten = 7 tens</p>	$\begin{array}{r} 1 \\ 24 \\ \times 3 \\ \hline 72 \end{array}$

Is your answer reasonable?

Exact: $3 \times 24 = 72$

Round 24 to 20.

Estimate: $3 \times 20 = 60$ Since 72 is close to 60, the answer is reasonable.

Find each product. Decide if your answer is reasonable.

$$\begin{array}{r} 1. \quad 33 \\ \times 3 \\ \hline 99 \end{array}$$

$$\begin{array}{r} 2. \quad 17 \\ \times 5 \\ \hline 85 \end{array}$$

$$\begin{array}{r} 3. \quad 24 \\ \times 7 \\ \hline 168 \end{array}$$

$$\begin{array}{r} 4. \quad 48 \\ \times 6 \\ \hline 288 \end{array}$$

$$\begin{array}{r} 5. \quad 62 \\ \times 8 \\ \hline 496 \end{array}$$

$$\begin{array}{r} 6. \quad 36 \\ \times 6 \\ \hline 216 \end{array}$$

$$\begin{array}{r} 7. \quad 88 \\ \times 5 \\ \hline 440 \end{array}$$

$$\begin{array}{r} 8. \quad 52 \\ \times 9 \\ \hline 468 \end{array}$$

9. **Estimation** Use estimation to decide which has the greater product: 813×5 or 907×4 .

$$\underline{813 \times 5}$$

Name _____

Step-Up 4

Practice

Multiplying 2-Digit by 1-Digit Numbers

Find each product. Decide if your answer is reasonable.

1.
$$\begin{array}{r} 18 \\ \times 4 \\ \hline 7 \square \end{array}$$

2.
$$\begin{array}{r} 24 \\ \times 7 \\ \hline \square 6 \square \end{array}$$

3.
$$\begin{array}{r} 51 \\ \times 4 \\ \hline \square 0 \square \end{array}$$

4.
$$\begin{array}{r} 49 \\ \times 7 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 48 \\ \times 5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 53 \\ \times 9 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 29 \\ \times 6 \\ \hline \end{array}$$

8. $81 \times 6 =$ _____

9. $89 \times 8 =$ _____

10. $77 \times 8 =$ _____

11. $94 \times 5 =$ _____

12. **Reason** Kendra says that $6 \times 65 = 390$. Estimate to check Kendra's answer. Is she right? Explain.

13. A large truck uses about 18 gallons of fuel in 1 hour of work. How many gallons of fuel are needed for 7 hours of work? _____

14. Which of the following is a reasonable estimate for 8×62 ?

A 48

B 480

C 540

D 660

15. Tyrone has 6 times as many marbles as his sister Pam. Pam has 34 marbles. Louis has 202 marbles. Who has more marbles, Tyrone or Louis? Explain how you found your answer.

Name _____

Step-Up 5

Reteaching

Using Models to Divide

You can use models to help you solve division problems.

The models below can help you find $59 \div 4$.

Find $59 \div 4$.

Estimate $60 \div 4 = 15$.

First divide the tens.

Now, change the tens into ones.

Next, divide the ones.

Write the remainder.

$$\begin{array}{r} 1 \\ 4 \overline{)59} \\ -4 \\ \hline \end{array}$$

4 tens

$$\begin{array}{r} 1 \\ 4 \overline{)59} \\ -4 \\ \hline 19 \end{array}$$

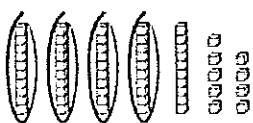
4 tens
19 ones

$$\begin{array}{r} 14 \\ 4 \overline{)59} \\ -4 \\ \hline 19 \\ -16 \\ \hline 3 \end{array}$$

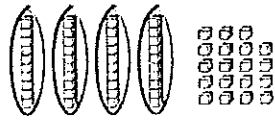
4 tens
19 ones

$$\begin{array}{r} 14 \text{ R}3 \\ 4 \overline{)59} \\ -4 \\ \hline 19 \\ -16 \\ \hline 3 \end{array}$$

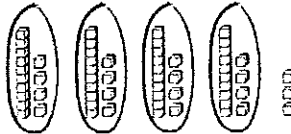
4 tens
19 ones
3 ← remainder



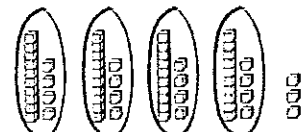
There is one tens block in each of 4 groups.



1 tens block and 9 ones blocks are equal to 19 ones blocks.



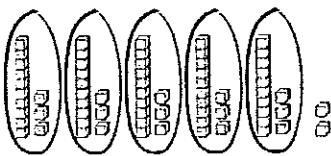
Each of the 4 groups has 1 tens block and 4 ones blocks.



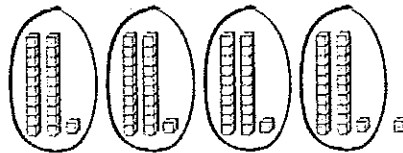
There are 3 ones blocks left. $59 \div 4 = 14 \text{ R}3$

Use the models below to help you fill in the boxes.

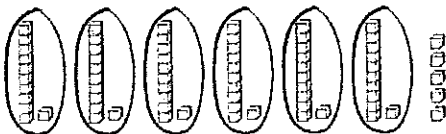
1. $67 \div \boxed{5} = \boxed{13} \text{ R}2$



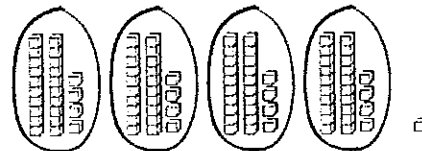
2. $85 \div 4 = \boxed{21} \text{ R} \boxed{1}$



3. $\boxed{71} \div 6 = \boxed{11} \text{ R}5$



4. $97 \div \boxed{4} = \boxed{24} \text{ R} \boxed{1}$



Name _____

Using Models to Divide

Find how many are in each group and how many are left over.

1. 72 CDs in 5 organizers

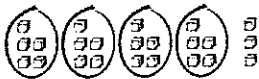
2. 54 stickers on 9 rolls

3. 62 plants in 7 rows

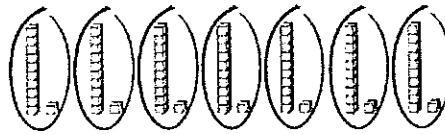
4. 98 chairs for 6 tables

In 5 through 8, use the model to complete each division sentence.

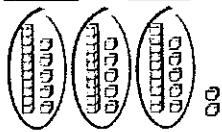
5. $23 \div \square = \square$ R3



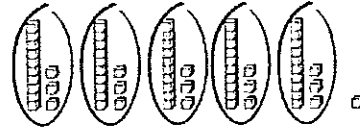
6. $\square \div 7 = \square$



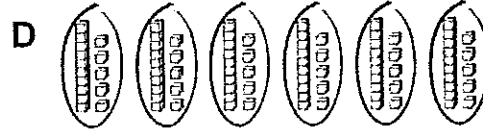
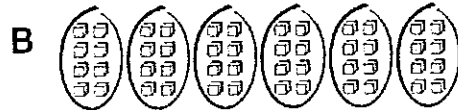
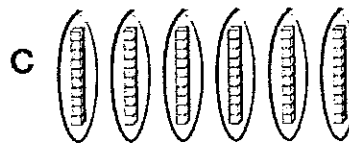
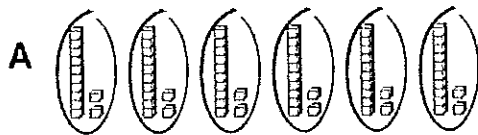
7. $\square \div \square = \square$ R2



8. $\square \div \square = \square$ R \square



9. Corey has 90 marbles. He decides to share them with his 6 friends so they can play a game. Which of the following models shows Corey sharing his marbles?



10. At Mr. Avery's farm there are 47 cows. There are 3 people who milk the cows each day. Does each person milk the same number of cows? Use a model to help you.

Name _____

Dividing 2-Digit by 1-Digit Numbers

Find $92 \div 6$.

Step 1:

To decide where to place the first digit in the quotient, compare the first digit of the dividend with the divisor.

$$6 \overline{)92}$$

$9 > 6$, so the first digit in the quotient will go in the tens place.

Step 2:

Divide the tens. Use multiplication facts and compatible numbers.

Think: $6 \times ? = 6$

Multiply. $6 \times 1 = 6$

Write 1 in the tens place of the quotient.

$$\begin{array}{r} 1 \\ 6 \overline{)92} \\ -6 \downarrow \\ \hline 32 \end{array}$$

Subtract. $9 - 6 = 3$

Compare. $3 < 6$

Bring down the ones.

Step 3:

Divide the ones. Use multiplication facts and compatible numbers.

Think: $6 \times ?$ is about 32

Multiply. $6 \times 5 = 30$

Write 5 in the ones place of the quotient.

$$\begin{array}{r} 15 \text{ R}2 \\ 6 \overline{)92} \\ -6 \downarrow \\ \hline 32 \\ -30 \\ \hline 2 \end{array}$$

Subtract. $32 - 30 = 2$

Compare. $2 < 6$

There are no more digits to bring down, so 2 is the remainder.

Step 4:

Check by multiplying and then adding the remainder.

$$6 \times 15 = 90$$

$$90 + 2 = 92$$

In 1 and 2 complete each division problem.

1.

$$\begin{array}{r} 1 \boxed{4} \\ 6 \overline{)84} \\ -\boxed{6} \\ \hline \boxed{2}4 \\ -\boxed{2}\boxed{4} \\ \hline 0 \end{array}$$

2.

$$\begin{array}{r} 3 \boxed{6} \\ 2 \overline{)72} \\ -\boxed{6} \\ \hline \boxed{1}\boxed{2} \\ -\boxed{1}\boxed{2} \\ \hline 0 \end{array}$$

Find each quotient. Check your answers.

3. $4 \overline{)86}$ **21 R2**

4. $5 \overline{)91}$ **18 R1**

5. $3 \overline{)76}$ **25 R1**

Name _____

Step-Up 6

Practice

Dividing 2-Digit by 1-Digit Numbers

In 1 through 3, complete each division problem.

1.

$$\begin{array}{r} 2 \square \\ 3 \overline{) 81} \\ - \square \\ \hline \square 1 \\ - \square \square \\ \hline 0 \end{array}$$

2.

$$\begin{array}{r} 1 \square \text{ R}3 \\ 5 \overline{) 68} \\ - \square \\ \hline \square 8 \\ - \square \square \\ \hline 3 \end{array}$$

3.

$$\begin{array}{r} \square 9 \\ 4 \overline{) 76} \\ - \square \\ \hline \square \square \\ - \square \square \\ \hline 0 \end{array}$$

For 4 through 11, find each quotient. Check your answers.

4. $2 \overline{) 89}$

5. $5 \overline{) 68}$

6. $4 \overline{) 92}$

7. $3 \overline{) 63}$

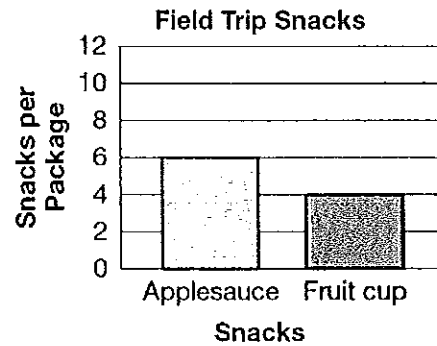
8. $6 \overline{) 96}$

9. $7 \overline{) 86}$

10. $2 \overline{) 92}$

11. $8 \overline{) 95}$

Mrs. Allen is planning to provide snacks for 72 fifth graders when they go on a field trip to the aquarium. Each student will receive 1 of each snack. Using the bar graph to the right, how many packages of each snack does Mrs. Allen need?



12. fruit cups _____

13. applesauce _____

14. Reason Which is the remainder of $37 \div 4$?

A 1

B 2

C 3

D 4

15. Explain how to find the number of left over pencils if Paula wants to give 25 pencils to 6 people.

Name _____

Factors

When multiplying two numbers, you know that both numbers are factors of the product.

Example 1

Find the factors of 24.

Factors	Product
↓ ↓ ↓	
1 × 24	= 24
2 × 12	= 24
3 × 8	= 24
4 × 6	= 24
6 × 4	= 24
8 × 3	= 24
12 × 2	= 24
24 × 1	= 24

Factors of 24:

1, 2, 3, 4, 6, 8, 12, and 24

Example 2

Find the factors of 16.

$$1 \times 16 = 16$$

$$2 \times 8 = 16$$

$$4 \times 4 = 16$$

$$8 \times 2 = 16$$

$$16 \times 1 = 16$$

Factors of 16:

1, 2, 4, 8, and 16

List all the factors of each number. Use counters to help.

1. 16

1, 2, 4, 8, 16

2. 21

1, 3, 7, 21

3. 13

1, 13

4. 25

1, 5, 25

5. 3

1, 3

6. 18

1, 2, 3, 6, 9, 18

7. **Reason** Look at 2×7 and 3×6 . Are these numbers all factors of 18? Explain your answer.

No; 2, 3, and 6 are factors of 18, but 7 is not a factor of 18.

Name _____

Factors

For 1 through 12, find all the factors of each number.

1. 28

2. 19

3. 8

4. 37

5. 25

6. 11

7. 36

8. 73

9. 15

10. 17

11. 7

12. 21

13. Tina buys 36 party favors to give out at a picnic. Which number will NOT let her divide the party favors evenly among the guests?

A 4

B 6

C 8

D 9

14. Mrs. Quinn wants to arrange her students' artwork in an array on the wall. If Mrs. Quinn has 21 pictures to hang, describe the arrays she can make.

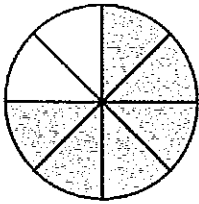
15. Mrs. Barry has 27 watches on display at her store. Mr. Barry says that she can make only 1 row with all 27 watches. Is Mr. Barry right? Explain.

Name _____

Modeling Addition of Fractions

Eight friends want to see a movie. Four of them want to see a comedy. Two want to see an action movie and two want to see a science-fiction movie. What fraction of the group wants to see either a comedy or a science-fiction movie?

You can use a model to add fractions.



Look at the circle. It is divided into eighths, because there are eight people in the group. Each person represents $\frac{1}{8}$ of the group. Four people want to see a comedy. Shade in four of the sections to represent $\frac{4}{8}$. Two people want to see a science-fiction movie. Shade in two more sections to represent $\frac{2}{8}$. Count the number of shaded sections. There are six. So, $\frac{6}{8}$ of the group wants to see either a comedy or a science fiction movie.

$\frac{4}{8} + \frac{2}{8} = \frac{6}{8}$ Write the sum in simplest form. $\frac{6 \div 2}{8 \div 2} = \frac{3}{4}$

Find each sum. Simplify, if possible.

- | | | |
|---|--|--|
| 1. $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ | 2. $\frac{4}{6} + \frac{2}{6} = \frac{6}{6}$ or 1 | 3. $\frac{3}{8} + \frac{3}{8} = \frac{6}{8}$ or $\frac{3}{4}$ |
| 4. $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$ or $\frac{1}{2}$ | 5. $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$ | 6. $\frac{4}{10} + \frac{6}{10} = \frac{10}{10}$ or 1 |
| 7. $\frac{5}{8} + \frac{3}{8} = \frac{8}{8}$ or 1 | 8. $\frac{4}{10} + \frac{1}{10} = \frac{5}{10}$ or $\frac{1}{2}$ | 9. $\frac{3}{4} + \frac{1}{4} = \frac{4}{4}$ or 1 |
| 10. $\frac{3}{10} + \frac{6}{10} = \frac{9}{10}$ | 11. $\frac{2}{6} + \frac{1}{6} + \frac{2}{6} = \frac{5}{6}$ | 12. $\frac{1}{12} + \frac{4}{12} + \frac{3}{12} = \frac{8}{12}$ or $\frac{2}{3}$ |

13. **Reason** We can express time as a fraction of an hour. For example, 15 minutes is $\frac{1}{4}$ hour. 30 minutes is $\frac{1}{2}$ hour. What fraction of an hour is 45 minutes?

$\frac{3}{4}$ hour

Name _____

Modeling Addition of Fractions

Find each sum. Simplify if possible. You may use fraction strips.

1. $\frac{2}{4} + \frac{1}{4}$ _____ 2. $\frac{1}{5} + \frac{1}{5}$ _____ 3. $\frac{3}{12} + \frac{8}{12}$ _____

4. $\frac{2}{6} + \frac{2}{6}$ _____ 5. $\frac{1}{2} + \frac{1}{2}$ _____ 6. $\frac{3}{8} + \frac{2}{8}$ _____

7. $\frac{3}{8} + \frac{4}{8}$ _____ 8. $\frac{4}{10} + \frac{1}{10}$ _____ 9. $\frac{1}{6} + \frac{4}{6}$ _____

10. **Model** A rectangular garden is divided into 8 equal parts. Draw a picture that shows $\frac{3}{8} + \frac{3}{8} = \frac{6}{8}$, or $\frac{3}{4}$.

11. Each day, Steven walked $\frac{1}{12}$ mile more than the previous day. The first day he walked $\frac{1}{12}$, the second day he walked $\frac{2}{12}$ mile, the third day he walked $\frac{3}{12}$ mile. On which day did the sum of his walks total at least 1 complete mile?

12. Find the missing value in the equation.

$$\frac{2}{12} + \frac{2}{12} + \frac{?}{12} = \frac{1}{2}$$

- A 1 B 2 C 3 D 4

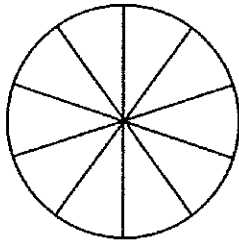
13. There are five people sitting around the dinner table. Each person has $\frac{2}{10}$ of a pie on their plate. How much pie is left? Explain.

Name _____

Modeling Subtraction of Fractions

Karla made a pizza and cut it into 10 slices. She ate four slices. What fraction of the pizza is left?

You can use a model to subtract fractions.



Karla's pizza is divided into 10 slices. One way to show this is $\frac{10}{10} = 1$ whole pizza. Karla ate four slices of the pizza. Cross out four of the slices. Count the number of slices left. There are 6 slices or $\frac{6}{10}$ of the pizza left.

$$\frac{10}{10} - \frac{4}{10} = \frac{6}{10}$$

Write the answer in simplest form, if possible.

$$\frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

Use fraction strips or models to subtract. Simplify if possible.

$$1. \frac{4}{5} - \frac{1}{5} = \frac{3}{5} \quad 2. \frac{8}{10} - \frac{3}{10} = \frac{5}{10} \text{ or } \frac{1}{2} \quad 3. \frac{4}{4} - \frac{3}{4} = \frac{1}{4}$$

$$4. \frac{6}{10} - \frac{2}{10} = \frac{4}{10} \text{ or } \frac{2}{5} \quad 5. \frac{3}{6} - \frac{2}{6} = \frac{1}{6} \quad 6. \frac{11}{12} - \frac{9}{12} = \frac{2}{12} \text{ or } \frac{1}{6}$$

$$7. \frac{6}{6} - \frac{3}{6} = \frac{3}{6} \text{ or } \frac{1}{2} \quad 8. \frac{8}{8} - \frac{6}{8} = \frac{2}{8} \text{ or } \frac{1}{4} \quad 9. \frac{15}{16} - \frac{7}{16} = \frac{8}{16} \text{ or } \frac{1}{2}$$

$$10. \frac{9}{12} - \frac{7}{12} = \frac{2}{12} \text{ or } \frac{1}{6} \quad 11. \frac{9}{10} - \frac{7}{10} = \frac{2}{10} \text{ or } \frac{1}{5} \quad 12. \frac{10}{12} - \frac{7}{12} = \frac{3}{12} \text{ or } \frac{1}{4}$$

13. Find n .

$$n - \frac{2}{6} = \frac{2}{6} \quad n = \frac{4}{6}$$

Name _____

Modeling Subtraction of Fractions

Use fraction strips to subtract. Simplify if possible.

1. $\frac{9}{12} - \frac{5}{12}$ _____

2. $\frac{8}{12} - \frac{6}{12}$ _____

3. $\frac{2}{2} - \frac{2}{2}$ _____

4. $\frac{5}{6} - \frac{2}{6}$ _____

5. $\frac{6}{6} - \frac{5}{6}$ _____

6. $\frac{10}{10} - \frac{4}{10}$ _____

7. $\frac{7}{8} - \frac{4}{8}$ _____

8. $\frac{7}{8} - \frac{2}{8}$ _____

9. $\frac{4}{4} - \frac{3}{4}$ _____

10. $\frac{3}{5} - \frac{1}{5}$ _____

11. $\frac{3}{5} - \frac{2}{5}$ _____

12. $\frac{9}{12} - \frac{2}{12}$ _____

13. Find $\frac{13}{16} - n$ if $n = \frac{8}{16}$. _____

14. **Model** Harriet has $\frac{4}{5}$ tank of gas left in her car.

If she needs $\frac{2}{5}$ tank to go to her friend's house and another $\frac{1}{5}$ tank to get back home, does she have enough gas?

Draw a diagram and explain your answer.

15. Alicia had $\frac{9}{12}$ yard of fabric. She used $\frac{6}{12}$ for a pillow. How much fabric does she have left? Explain how you found your answer.

Name _____

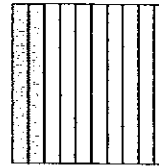
Fractions and Decimals

Fractions with a denominator of 10, 100, or 1,000 can be written as a decimal. Tenths, hundredths, and thousandths are written as digits to the right of the decimal point.

The shaded part is $\frac{2}{10}$.

Write it as a decimal: 0.2

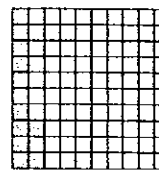
Word form: two tenths



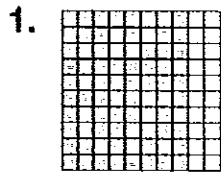
The shaded part is $\frac{13}{100}$.

Write it as a decimal: 0.13

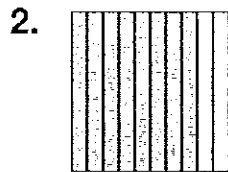
Word form: thirteen hundredths



Write a fraction and a decimal to tell how much is shaded.



$\frac{80}{100}; 0.80$



$\frac{8}{10}; 0.8$

3. How are the two shaded grids alike?
How are they different?

They show equal parts of one whole.
One shows tenths and the other shows hundredths.

Write each fraction as a decimal.

4. $\frac{9}{100}$
0.09

5. $\frac{275}{1,000}$
0.275

6. $\frac{3}{10}$
0.3

7. $\frac{9}{10}$
0.9

Write each decimal as a fraction.

8. 0.148
 $\frac{148}{1,000}$

9. 0.07
 $\frac{7}{100}$

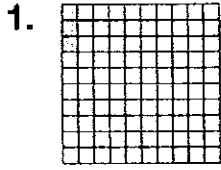
10. 0.40
 $\frac{40}{100}$

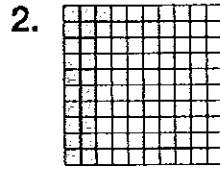
11. 0.76
 $\frac{76}{100}$

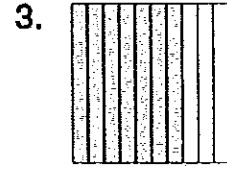
Name _____

Fractions and Decimals

Write a fraction and a decimal to show how much is shaded.







Draw a model that shows each decimal.

4. 0.78

5. 0.16

6. 0.3

Write each fraction as a decimal.

7. $\frac{165}{1,000}$

8. $\frac{17}{100}$

9. $\frac{1}{100}$

10. $\frac{4}{10}$

Write each decimal as a fraction.

11. 0.03

12. 0.036

13. 0.5

14. 0.78

15. In the decimal models, how many strips equal 10 small squares?

A 7

B 1

C 70

D 10

16. Explain the steps you would take to write $\frac{19}{100}$ as a decimal.
