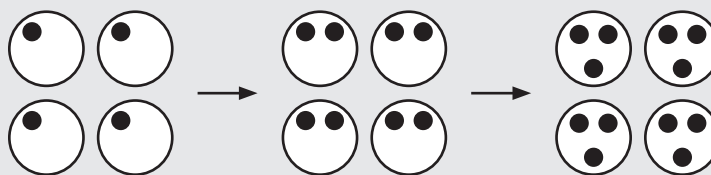


## NS3-48 Sharing When You Know the Number of Sets

Four friends want to share 12 cookies. They set out 4 plates.

They put 1 cookie on each plate, then repeat.



Each plate holds a **set** (or group) of 3 cookies.

When 12 cookies are **divided** (or shared equally) into 4 sets, there are 3 cookies **in each set**.

1. Put an equal number of cookies on each plate.

Hint: Draw the plates, then place 1 cookie at a time.

a) 6 cookies    3 plates



b) 9 cookies    3 plates

c) 8 cookies    2 plates

d) 5 plates    10 cookies

e) 2 plates    6 cookies

f) 4 plates    12 cookies

g) 4 plates    8 cookies

h) 2 plates    12 cookies

2. Draw dots for the things being shared equally. Draw circles for the sets.

a) 3 wagons

9 students

How many students in each wagon?

b) 15 stamps

3 pages

How many stamps on each page?

\_\_\_\_\_ students in each wagon

\_\_\_\_\_ stamps on each page

c) 4 boats

12 students

How many students on each boat?

d) 2 boxes

10 pens

How many pens in each box?

\_\_\_\_\_ students on each boat

\_\_\_\_\_ pens in each box

**3.** Draw a picture or make a model to solve the problem.

a) 4 friends share 8 tickets.

How many tickets does each friend get?

b) 12 chairs are placed in 3 rows.

How many chairs are in each row?

c) 24 flowers are planted in 6 rows.

How many flowers are in each row?

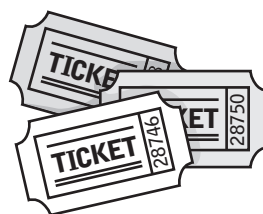
d) Edmond earned 20 dollars for his work. He worked 5 hours.

How much did he earn each hour?

Hint: Draw dots for dollars and circles for hours.

e) Kate earned 15 dollars for her work. She worked 3 hours.

How much did she earn each hour?



## NS3-49 Sharing When You Know the Number in Each Set

Ivan has 20 apples. He wants to put 5 apples in each bag.

To find out how many bags he needs, he starts by counting out 5 apples.



He then keeps counting out sets of 5 apples until he has used all 20 apples.



He can make 4 bags. When 20 apples are divided into sets of 5 apples, there are 4 sets.

1. Put the correct number of dots in each set.



2 dots in each set



3 dots in each set



2 dots in each set



3 dots in each set



5 dots in each set



3 dots in each set

2. Divide the array into the given number of sets.

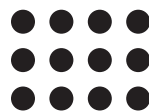
a) sets of 2



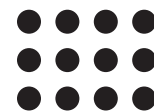
b) sets of 3



c) sets of 3



d) sets of 4



3. Draw a picture to solve the problem. Hint: Start by drawing a circle and placing the correct number of dots in the circle.

a) 12 dots

4 dots in each set

How many sets? \_\_\_\_\_

b) 15 dots

5 dots in each set

How many sets? \_\_\_\_\_

4. Draw dots for the things being divided equally.  
Draw circles for the sets.

a) 10 students

5 students in each wagon

How many wagons?

\_\_\_\_\_ wagons

b) 12 stamps

4 stamps on each page

How many pages?

\_\_\_\_\_ pages

c) 20 books

4 books on each shelf

How many shelves?

\_\_\_\_\_ shelves

d) 15 fish

5 fish in each tank

How many tanks?

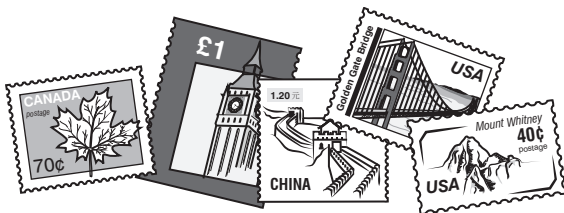
\_\_\_\_\_ tanks

5. Sam has 10 oranges. He wants to sell bags of 2 oranges. How many bags can he sell?

6. Emma has 12 books. She wants to put 3 books in each bag. How many bags does she need?

7. Raj has 15 stamps. He wants to put 5 stamps on each page of his stamp book. How many pages will he need?

8. A sailboat can hold 3 students. There are 12 students. How many sailboats are needed?



## NS3-50 Sets

12 students go canoeing.  
There are 4 canoes.  
A canoe holds 3 students.



What has been shared or divided into sets?

*Students.*

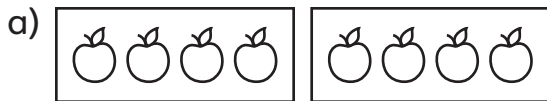
How many sets are there?

*There are 4 sets of students.*

How many are in each set?

*There are 3 students in each set.*

1. Fill in the blanks.



What has been shared or divided  
into sets? \_\_\_\_\_

How many sets? \_\_\_\_\_

How many in each set? \_\_\_\_\_



What has been shared or divided  
into sets? \_\_\_\_\_

How many sets? \_\_\_\_\_

How many in each set? \_\_\_\_\_

2. Draw a picture to show the situation. Use circles for sets and dots for items.





a) 3 sets      4 items in each set

b) 4 sets      5 items in each set

c) 2 groups      3 items in each group

d) 2 groups      4 items in each group

3. Fill in the table.

		What Has Been Shared or Divided into Sets?	How Many Sets?	How Many in Each Set?	
a)	15 students 3 students in each boat 5 boats		<i>students</i>	5	3
b)	5 friends 20 cookies 4 cookies for each friend				
c)	18 oranges 6 boxes 3 oranges in each box				
d)	4 dogs 20 spots 5 spots on each dog				
e)	5 stamps on each page 35 stamps 7 pages				
f)	3 playgrounds 12 swings 4 swings in each playground				
g)	5 people in each house 10 people 2 houses				
h)	20 chairs 5 rows 4 chairs in each row				

## NS3-51 Two Ways of Sharing

Iva has 12 cookies. There are two ways she can share or divide her cookies equally.

### Method 1:

She can decide how many sets.

Example: She wants to make 3 sets.  
She draws 3 circles.



She puts one cookie in each circle.



She continues until she uses all 12 cookies.



There are 4 cookies in each set.

### Method 2:

She can decide how many in each set.

Example: She puts 3 cookies in each set.



She counts out sets of 3 until she uses all 12 cookies.



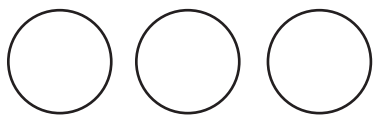
3      6      9      12

She makes 4 sets.

1. Share 12 dots equally. How many dots are in each set?

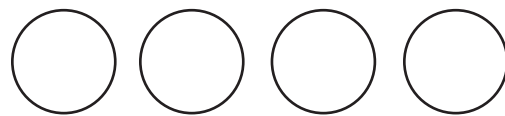
Place one dot at a time.

a) 3 sets



There are \_\_\_\_\_ dots in each set.

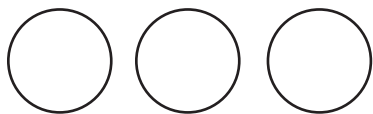
b) 4 sets



There are \_\_\_\_\_ dots in each set.

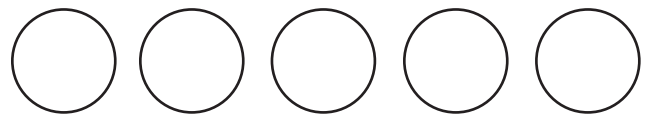
2. Share 15 dots equally. How many dots are in each set?

a) 3 sets



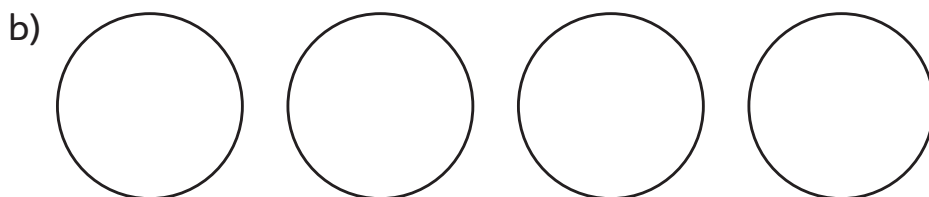
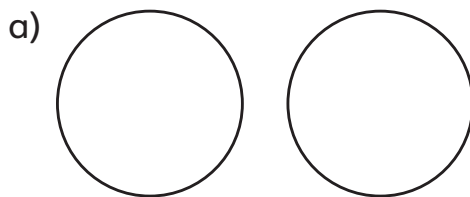
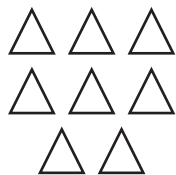
There are \_\_\_\_\_ dots in each set.

b) 5 sets

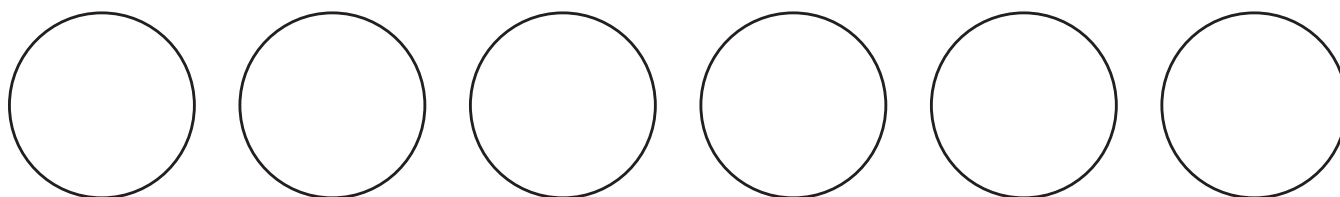
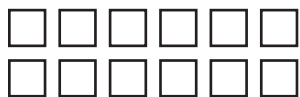


There are \_\_\_\_\_ dots in each set.

3. Share the triangles equally among the sets.  
Hint: Count the triangles first.



4. Share the squares equally among the sets.



5. Draw a picture to group 12 dots equally.

a) 3 dots in each set

b) 6 dots in each set

6. Show two ways you could put 10 apples in baskets.

a) Put 5 apples in each basket.

b) Put 2 apples in each basket.



## NS3-52 Two Ways of Sharing: Word Problems

I. Fill in what you know. Write a question mark for what you don't know.

	What Has Been Shared or Divided into Sets?	How Many Sets?	How Many in Each Set?
a) Jay has 15 stamps. He puts 5 stamps on each page of his book.	<i>stamps</i>	?	5
b) 20 campers go canoeing in 10 canoes.	<i>campers</i>	10	?
c) Don has 15 pens. He puts them into 3 boxes.			
d) 4 friends share 20 apples.			
e) Grace has 10 cookies. She puts 5 on each plate.			
f) 12 campers go sailing. There are 4 campers in each boat.			
g) 12 fruit bars are shared among 3 campers.			
h) 8 chairs are in 2 rows.			
i) There are 10 friends. 2 friends fit in a go-cart.			
j) There are 20 books on a bookshelf. Each shelf holds 5 books.			

2. Draw dots to show the answer.

a) 10 dots    5 sets

\_\_\_\_\_ dots in each set

c) 15 dots    5 dots in each set

\_\_\_\_\_ sets

e) 6 chairs in 2 rows

How many chairs are in  
each row? \_\_\_\_\_

g) 4 boys share 12 marbles.

How many marbles does each  
boy get? \_\_\_\_\_

i) 15 children go sailing in 3 boats.

How many children are in  
each boat? \_\_\_\_\_

b) 6 dots    3 dots in each set

\_\_\_\_\_ sets

d) 8 dots    4 sets

\_\_\_\_\_ dots in each set

f) Ron has 8 pencils.  
He puts 2 pencils in each box.

How many boxes does  
he use? \_\_\_\_\_

h) Sandy has 9 pears.  
She gives 3 pears to each friend.

How many friends receive  
pears? \_\_\_\_\_

j) Lewis has 16 stickers.  
He puts 4 on a page.

How many pages does  
he use? \_\_\_\_\_

## NS3-53 Division and Addition



The picture shows 12 objects divided into sets of 4. There are 3 sets.

The **division sentence** is  $12 \div 4 = 3$ .

1. Write a division sentence for the picture.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

2. The answer to the division sentence shows the number of sets.

Draw a picture for the division sentence.

a)  $15 \div 5 = 3$



b)  $12 \div 2 = 6$



c)  $20 \div 4 = 5$



d)  $16 \div 8 = 2$



e)  $24 \div 6 = 4$



You can rewrite any division sentence as an addition sentence.

Example:  $12 \div 3 = 4$  because 12 divided into sets of size 3 equals 4 sets.



So  $3 + 3 + 3 + 3 = 12$ .

Adding four 3s equals 12.

3. Draw a picture and write an **addition** sentence for the **division** sentence.

a)  $6 \div 2 = 3$



$2 + 2 + 2 = 6$

b)  $8 \div 4 = 2$

\_\_\_\_\_

c)  $15 \div 5 = 3$

\_\_\_\_\_

d)  $9 \div 3 = 3$

\_\_\_\_\_

4. Draw a picture and write a **division** sentence for the **addition** sentence.

a)  $4 + 4 + 4 = 12$



$12 \div 4 = 3$

b)  $3 + 3 + 3 + 3 + 3 = 15$

\_\_\_\_\_

c)  $6 + 6 + 6 = 18$

\_\_\_\_\_

d)  $2 + 2 + 2 + 2 + 2 = 10$

\_\_\_\_\_

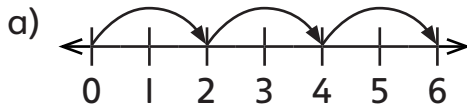
# NS3-54 Dividing by Skip Counting

You can divide by skip counting on a number line. Example: Find  $12 \div 3$ .

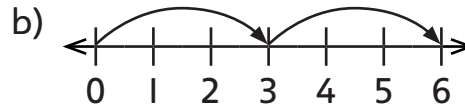


It takes 4 skips of size 3 to get to 12.  $3 + 3 + 3 + 3 = 12$  so  $12 \div 3 = 4$

1. Use the number line to complete the division sentence.

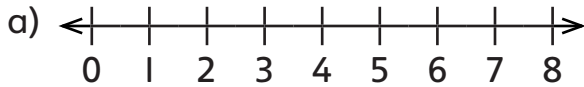


$6 \div 2 = \underline{3}$

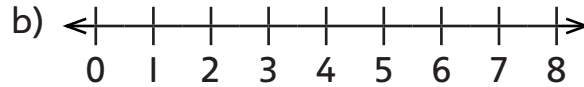


$6 \div 3 = \underline{\quad}$

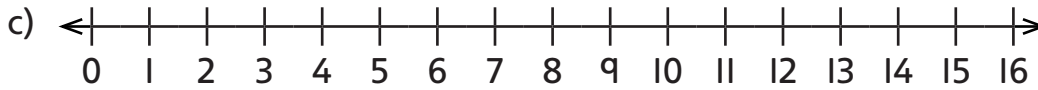
2. Use the number line to divide.



$8 \div 4 = \underline{\quad}$

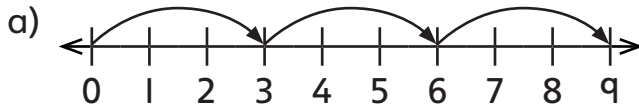


$4 \div 4 = \underline{\quad}$

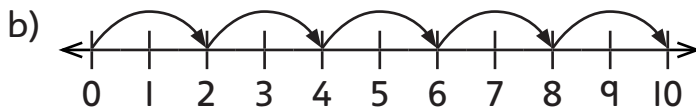


$16 \div 4 = \underline{\quad}$

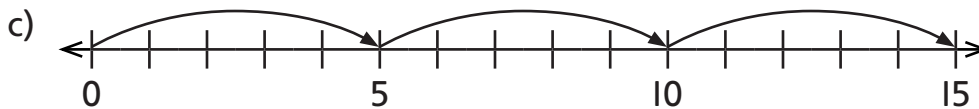
3. What division sentence does the picture show?



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

You can also divide by skip counting on your fingers.

Example: To find  $6 \div 2$ , count by 2s until you reach 6.

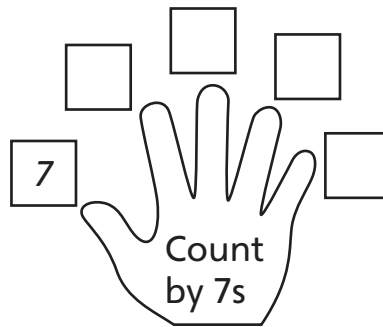
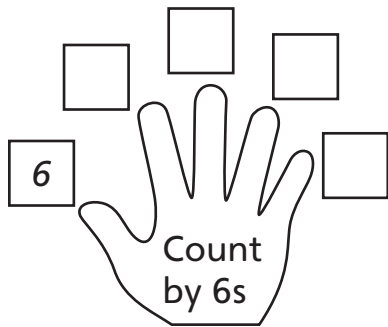


The number of fingers you have up when you stop is the answer.  
So  $6 \div 2 = 3$ .

4. Find the answer by skip counting on your fingers.

- a)  $10 \div 2 = \underline{\quad}$     b)  $8 \div 2 = \underline{\quad}$     c)  $4 \div 2 = \underline{\quad}$     d)  $9 \div 3 = \underline{\quad}$   
 e)  $10 \div 5 = \underline{\quad}$     f)  $15 \div 5 = \underline{\quad}$     g)  $25 \div 5 = \underline{\quad}$     h)  $20 \div 5 = \underline{\quad}$   
 i)  $12 \div 3 = \underline{\quad}$     j)  $6 \div 3 = \underline{\quad}$     k)  $12 \div 2 = \underline{\quad}$     l)  $5 \div 5 = \underline{\quad}$   
 m)  $2 \div 2 = \underline{\quad}$     n)  $30 \div 5 = \underline{\quad}$     o)  $15 \div 3 = \underline{\quad}$     p)  $20 \div 4 = \underline{\quad}$   
 q)  $16 \div 2 = \underline{\quad}$     r)  $3 \div 3 = \underline{\quad}$     s)  $20 \div 2 = \underline{\quad}$     t)  $12 \div 4 = \underline{\quad}$

5. Fill in the missing numbers on the hands. Then divide by skip counting.



- a)  $18 \div 6 = \underline{\quad}$     b)  $24 \div 6 = \underline{\quad}$     c)  $12 \div 6 = \underline{\quad}$   
 d)  $21 \div 7 = \underline{\quad}$     e)  $35 \div 7 = \underline{\quad}$     f)  $28 \div 7 = \underline{\quad}$   
 g)  $30 \div 6 = \underline{\quad}$     h)  $6 \div 6 = \underline{\quad}$     i)  $7 \div 7 = \underline{\quad}$

**6.** Find the answer by skip counting.

a) Three friends share 12 stickers.  
How many stickers does each get?

b) Twenty-four students sit at 6 tables.  
How many students are at each table?

# NS3-55 The Two Meanings of Division

David buys 12 fish from a pet store. He has 4 fish bowls.

How many fish can David put in each bowl? David counts by 4s to find out:



"I could put one fish in each bowl."  
(4 are placed)



"I could put one more in each bowl."  
(8 are placed)

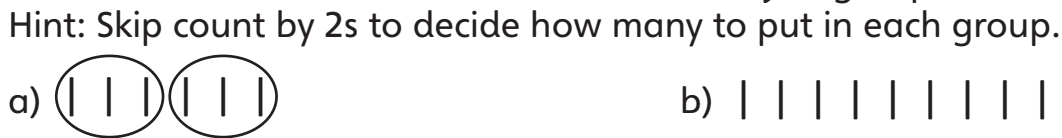


"I could put one more in each bowl."  
(12 are placed)



He raised 3 fingers, so he knows that  $12 \div 4 = 3$ . He puts 3 fish in each bowl.

1. Count the lines. Then divide the lines into 2 equal groups.



\_\_\_\_\_ lines altogether

\_\_\_\_\_ lines altogether

\_\_\_\_\_ in each group

\_\_\_\_\_ in each group



\_\_\_\_\_ lines altogether

\_\_\_\_\_ lines altogether

\_\_\_\_\_ in each group

\_\_\_\_\_ in each group

2. Count the objects. Then divide the objects into equal groups.

Hint: Skip count by the number of groups to decide how many to put in each group.

a) 3 equal groups

b) 5 equal groups



c) 2 equal groups

d) 4 equal groups



Here are two ways to describe the picture below.



When 15 things are divided into 5 sets, there are 3 things in each set:  $15 \div 5 = 3$ .

When 15 things are divided into sets of size 3, there are 5 sets:  $15 \div 3 = 5$ .

3. Fill in the blanks. Then write two division sentences.



\_\_\_\_\_ lines    \_\_\_\_\_ sets

\_\_\_\_\_ lines    \_\_\_\_\_ sets

\_\_\_\_\_ lines    \_\_\_\_\_ sets

\_\_\_\_\_ lines in each set

\_\_\_\_\_ lines in each set

\_\_\_\_\_ lines in each set

\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

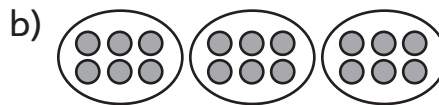
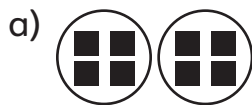
\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_  $\div$  \_\_\_\_\_ = \_\_\_\_\_

4. Fill in the blanks. Then write two division sentences.



\_\_\_\_\_ squares    \_\_\_\_\_ sets

\_\_\_\_\_ dots    \_\_\_\_\_ sets

\_\_\_\_\_ stars    \_\_\_\_\_ sets

\_\_\_\_\_ squares in each set

\_\_\_\_\_ dots in each set

\_\_\_\_\_ stars in each set

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**5.** Solve the problem by drawing a picture. Then write a division sentence for your answer.

a) 9 triangles, 3 sets  
How many triangles in each set?

b) 12 squares, 4 squares in each set  
How many sets?

c) 30 people, 5 vans  
How many people in each van?

d) 20 campers, 4 in each tent  
How many tents?



# NS3-56 Division and Multiplication

Remember:  $10 \div 2 = 5$  tells us that  $10 \div 5 = 2$ , and  $5 \times 2 = 10$  tells us that  $2 \times 5 = 10$ . You can rewrite any **division** sentence as a **multiplication** sentence.

Example: 10 divided into sets of size 2 equals 5 sets or  $10 \div 2 = 5$ .



You can rewrite this as: 5 sets of size 2 equals 10 or  $5 \times 2 = 10$ .

I. Write two multiplication sentences and two division sentences for the picture.




---



---



---



---




---



---



---



---




---



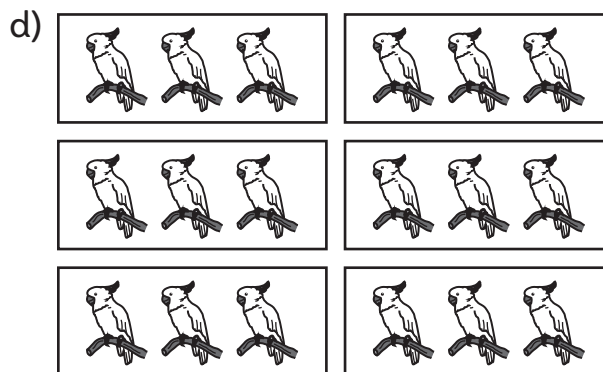
---



---



---




---



---



---



---

2. Fill in the blanks.



\_\_\_\_\_ lines in total  
 \_\_\_\_\_ lines in each set  
 \_\_\_\_\_ sets



\_\_\_\_\_ lines in total  
 \_\_\_\_\_ sets  
 \_\_\_\_\_ lines in each set



\_\_\_\_\_ lines in each group  
 \_\_\_\_\_ groups  
 \_\_\_\_\_ lines



\_\_\_\_\_ lines in each group  
 \_\_\_\_\_ lines  
 \_\_\_\_\_ groups

**3.** Draw a picture to show the situation.

- a) 12 lines altogether, 3 lines in each set, 4 sets
- b) 8 lines, 4 lines in each set, 2 sets
- c) 5 sets, 3 lines in each set, 15 lines in total
- d) 12 lines, 2 sets, 6 lines in each set
- e) 10 lines, 5 in each set, 2 sets

**4.** Draw a picture to show the situation. Then write two division sentences and two multiplication sentences.

- a) 20 lines, 5 sets, 4 lines in each set
- b) 15 lines, 5 lines in each set, 3 sets

**5.** Draw a picture to find the missing information.

- |                        |                         |                         |
|------------------------|-------------------------|-------------------------|
| a) 5 lines in each set | b) 18 lines             | c) _____ lines in total |
| _____ sets             | _____ lines in each set | 3 groups                |
| 15 lines altogether    | 3 sets                  | 4 lines in each group   |

## NS3-57 Knowing When to Multiply or Divide

I. Multiply or divide to find the missing information (?).

	Total Number of Things	Number of Sets	Number in Each Set	Multiplication or Division Sentence
a)	?	8	2	$8 \times 2 = 16$
b)	27	3	?	$27 \div 3 = 9$
c)	20	?	5	
d)	10	2	?	
e)	?	4	8	
f)	21	7	?	
g)	32	8	?	
h)	45	?	9	
i)	64	8	?	
j)	81	9	?	
k)	72	?	8	
l)	16	4	?	
m)	28	?	7	
n)	42	6	?	
o)	?	8	9	

2. Write a multiplication or division sentence to solve the problem.

a) 15 things in total  
5 things in each set

\_\_\_\_\_

How many sets?

\_\_\_\_\_

b) 5 sets  
4 things in each set

\_\_\_\_\_

How many in total?

\_\_\_\_\_

c) 24 things in total  
6 sets

\_\_\_\_\_

How many in each set?

\_\_\_\_\_

d) 4 groups  
7 things in each group

\_\_\_\_\_

How many in total?

\_\_\_\_\_

e) 2 things in each set  
12 things in total

\_\_\_\_\_

How many sets?

\_\_\_\_\_

f) 5 groups  
45 things in total

\_\_\_\_\_

How many in  
each group? \_\_\_\_\_

g) 5 things in each set  
4 sets

\_\_\_\_\_

How many in total?

\_\_\_\_\_

h) 8 things in each set  
3 sets

\_\_\_\_\_

How many in total?

\_\_\_\_\_

i) 16 things in total  
8 sets

\_\_\_\_\_

How many in each set?

\_\_\_\_\_

j) 3 things in each set  
6 sets

\_\_\_\_\_

How many in total?

\_\_\_\_\_

k) 12 things in total  
4 sets

\_\_\_\_\_

How many in each set?

\_\_\_\_\_

l) 20 things in total  
4 sets

\_\_\_\_\_

How many in each set?

\_\_\_\_\_

**3.** Make up your own problem with things in sets.  
Draw a picture to solve it.

## NS3-58 Knowing When to Multiply or Divide: Word Problems

I. Fill in the table. Use a question mark to show what you don't know.

	Total Number of Things	Number of Sets	Number in Each Set	Multiplication or Division Sentence
a) 20 people 4 vans	20	4	?	$20 \div 4 = ?$
b) 3 marbles in each jar 6 jars	?	6	3	$6 \times 3 = ?$
c) 15 flowers 5 pots				
d) 4 chairs at each table 2 tables				
e) 20 flowers 4 in each row				
f) 6 seats in each row 2 rows				
g) 18 houses 9 houses on each block				
h) 15 chairs 3 rows				
i) 6 tents 3 campers in each tent				
j) 9 boxes 3 sea shells in each box				
k) 6 legs on each insect 42 legs				

**2.** Find the missing number in each part of Question I.

The fact family for the multiplication sentence  $3 \times 5 = 15$  is:

$3 \times 5 = 15$

$5 \times 3 = 15$

$15 \div 3 = 5$

$15 \div 5 = 3$

3. Complete the fact family for the given multiplication or division sentence.

a)  $4 \times 2 = 8$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b)  $5 \times 6 = 30$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c)  $10 \div 2 = 5$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

d)  $12 \div 4 = 3$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

e)  $9 \times 3 = 27$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

f)  $6 \times 8 = 48$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Armand plants 24 trees in 3 rows. How many trees are in each row?

5. Alex plants 4 rows of trees with 7 in each row. How many trees did she plant?

6. A canoe can hold 3 people.

a) How many canoes are needed for 21 people?

b) How many people can go canoeing with 5 canoes?

7. You need 3 tickets to ride the roller coaster at the amusement park.

a) Mandy, Tom, and Jane want to ride the roller coaster. How many tickets will they need altogether?

b) How many tickets are needed for 8 people?

**BONUS** ► Kim has 17 tickets. If she pays for herself and 4 of her friends, how many tickets will she have left?