

RP6-1 Sequences

In an **increasing sequence**, each number is greater than the one before it.

Deborah wants to continue the number sequence:

She finds the **difference** between the first two numbers:



6, 8, 10, 12, \_\_\_\_\_

6,  $\textcircled{2}$ , 8, 10, 12, \_\_\_\_\_

She finds that the difference between the other numbers in the sequence is also 2. So the sequence was made by adding 2:

6,  $\textcircled{2}$ , 8,  $\textcircled{2}$ , 10,  $\textcircled{2}$ , 12, \_\_\_\_\_

To continue the sequence, Deborah adds 2 to the last number in the sequence.

The next number in the sequence is 14:

6,  $\textcircled{2}$ , 8,  $\textcircled{2}$ , 10,  $\textcircled{2}$ , 12,  $\textcircled{2}$ , 14

Extend the sequence. Start by finding the gap between the numbers.

a)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
2, 5, 8, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
1, 7, 13, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
2, 7, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

d)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
4, 8, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

e)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
1, 6, 11, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

f)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
4, 10, 16, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

g)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
2, 12, 22, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

h)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
7, 15, 23, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

i)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
31, 34, 37, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

j)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
92, 98, 104, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

k)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
12, 23, 34, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

l)  $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   $\textcircled{\quad}$   
0, 8, 16, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

A plant that is 17 cm tall grows 2 cm each day.

a) How tall will the plant be after three days? \_\_\_\_\_

b) In how many days will the plant be 27 cm tall? \_\_\_\_\_

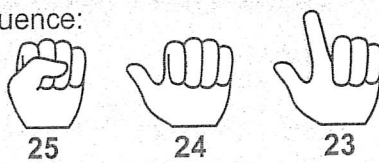


Unit 6: Ratios and Proportional Relationships

In a **decreasing sequence**, each number is less than the one before it.

Faraz wants to continue the number sequence:

He finds the **difference** between the first two numbers:



He finds that the difference between the other numbers in the sequence is also 2. So the sequence was made by subtracting 2.

The next number in the sequence is 19:

25 , 23 , 21 , \_\_\_\_\_

$\begin{matrix} (-2) \\ 25, 23, 21, \end{matrix}$  \_\_\_\_\_

$\begin{matrix} (-2) & (-2) \\ 25, 23, 21, \end{matrix}$  \_\_\_\_\_

$\begin{matrix} (-2) & (-2) & (-2) \\ 25, 23, 21, \end{matrix}$  19

3. Extend the sequence.

a) 18 , 15 , 12 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

b) 32 , 26 , 20 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

c) 52 , 47 , 42 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

d) 34 , 30 , 26 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

e) 51 , 46 , 41 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

f) 84 , 80 , 76 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

g) 62 , 51 , 40 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

h) 97 , 89 , 81 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

i) 71 , 64 , 57 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

j) 62 , 58 , 54 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

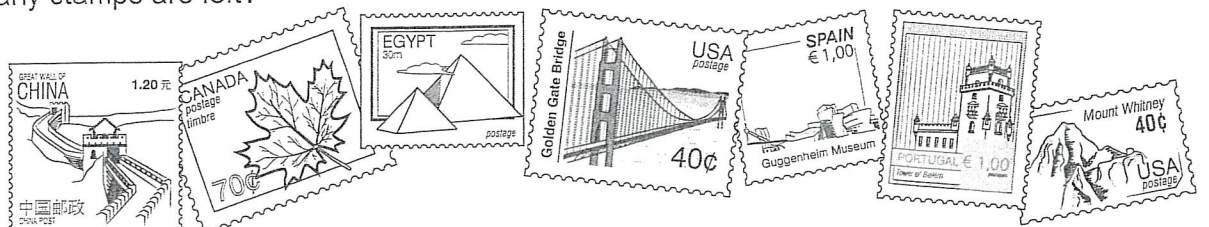
k) 82 , 73 , 64 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

l) 84 , 72 , 60 , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

4. Use a decreasing sequence to solve each problem:

a) Judi has \$49. She spends \$8 each day. How much money does she have left after 5 days?

b) Huang has a roll of 74 stamps. He uses 7 stamps each day for 4 days. How many stamps are left?



## RP6-2 Extending a Sequence

---

1. Add the number given to continue the sequence.

a) (add 4)      41, 45, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b) (add 8)      60, 68, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c) (add 3)      74, 77, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

d) (add 11)     20, 31, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

e) (add 8)      61, 69, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

f) (add 11)     31, 42, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

2. Subtract the number given to continue the sequence.

a) (subtract 3)   25, 22, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b) (subtract 2)   34, 32, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c) (subtract 6)   85, 79, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

d) (subtract 12) 89, 77, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

e) (subtract 8)   57, 49, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

f) (subtract 7)   57, 50, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**BONUS** ► Create a sequence of your own. After writing the sequence in the blanks, say what you added or subtracted each time.

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ My rule: \_\_\_\_\_

3. Which one of the following sequences was made by adding 7? Circle it.

Hint: Check all the numbers in the sequence.

4, 10, 18, 21

4, 11, 16, 21

3, 10, 17, 24

4. 72, 61, 50, 39, 28, ...

Brenda says this sequence was made by subtracting 12 each time.

Rajiv says it was made by subtracting 11.

Who is right? \_\_\_\_\_ Explain how you know. \_\_\_\_\_

# RP6-3 Tables

Claude creates an **increasing pattern** with squares. He records the number of squares in each figure in a T-table. He also records the number of squares he adds each time he makes a new figure.

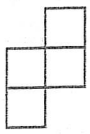


Figure 1

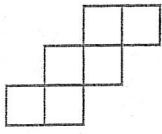


Figure 2

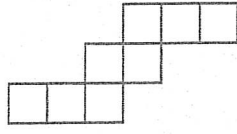


Figure 3

Figure	# of Squares
1	4
2	6
3	8

2 ← Number of squares added each time  
2 ←

The number of squares in the figures are 4, 6, 8, ....

Claude writes a **rule** for this number pattern:

*Start at 4 and add 2 each time.*

1. Claude makes other *increasing patterns* with squares.

How many squares does he add to make each new figure?

Write your answer in the circles. Then write a rule for the pattern.

a)

Figure	Number of Squares
1	2
2	8
3	14

Rule:

b)

Figure	Number of Squares
1	3
2	9
3	15

Rule:

c)

Figure	Number of Squares
1	1
2	6
3	11

Rule:

d)

Figure	Number of Squares
1	1
2	8
3	15

Rule:

e)

Figure	Number of Squares
1	5
2	13
3	21

Rule:

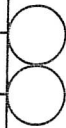
f)

Figure	Number of Squares
1	11
2	22
3	33

Rule:

g)


Figure	Number of Squares
1	3
2	12
3	21



Rule:

h)

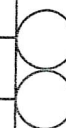
Figure	Number of Squares
1	6
2	13
3	20



Rule:

i)

Figure	Number of Squares
1	7
2	13
3	19



Rule:

2. Extend the number pattern. How many squares would be used in Figure 6?

a)

Figure	Number of Squares
1	2
2	10
3	18

b)

Figure	Number of Squares
1	4
2	9
3	14

c)

Figure	Number of Squares
1	7
2	11
3	15

i. After making Figure 3, Claude has only 35 squares left. Does he have enough squares to complete Figure 4? Circle your answer.

a)

Figure	Number of Squares
1	4
2	13
3	22

Yes      No

b)

Figure	Number of Squares
1	6
2	17
3	28

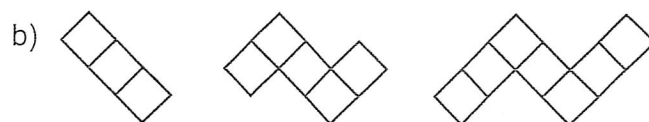
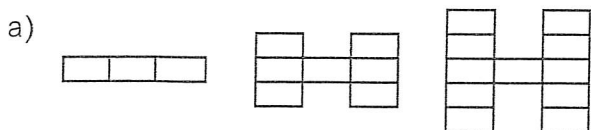
Yes      No

c)

Figure	Number of Squares
1	9
2	17
3	25

Yes      No

Make a T-table to show how many shapes will be needed to make the 5<sup>th</sup> figure in each pattern.



5. a) The snow is 17 cm deep at 5 p.m.  
Each hour, 4 cm of snow falls.  
How deep is the snow at 9 p.m.?

Time	Depth of Snow
5 p.m.	17 cm

- b) Philip had \$42 in savings by the end of July.  
Each month he saves \$9. How much will he have by the end of October?

Month	Savings
July	\$42

6. Sarah's fish tank is leaking.  
At 6 p.m. there are 21 L of water in the tank.  
At 7 p.m. there are 18 L, and at 8 p.m. there are 15 L.



- a) How many liters of water leak out each hour?  
\_\_\_\_\_
- b) How many liters will be left in the tank at 10 p.m.?  
\_\_\_\_\_
- c) How many hours will it take for all the water to leak out?  
\_\_\_\_\_

Time	Amount of Water in the Tank
6 p.m.	21 L
7 p.m.	18 L
8 p.m.	15 L
9 p.m.	
10 p.m.	

7. A store rents snowboards at \$7 for the first hour and \$5 for every hour after that.  
How much does it cost to rent a snowboard for 6 hours?

8. a) How many triangles would Marco need to make a figure with 10 squares?

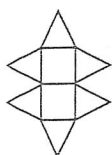


Figure 1

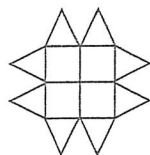


Figure 2

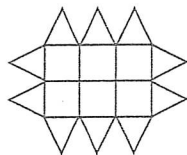


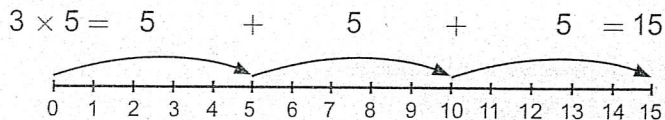
Figure 3

- b) April says that she needs 15 triangles to make the sixth figure. Is she correct?

9. Merle saves \$55 in August. She saves \$6 each month after that.  
Alex saves \$42 in August. He saves \$7 each month after that.  
Who will have saved the most money by the end of January?

# RP6-4 Multiplying and Dividing by Skip Counting

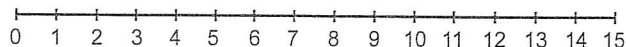
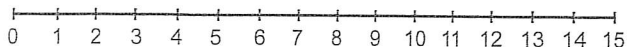
Amy finds the product of 3 and 5 by skip counting on a number line. She counts off three 5s. From the picture, Amy can see that the **product** of 3 and 5 is 15.



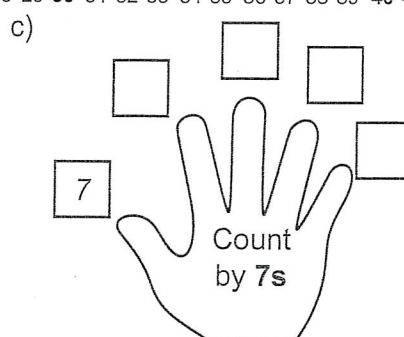
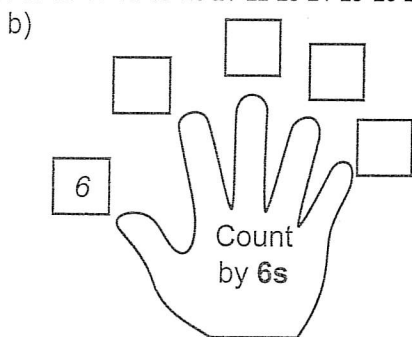
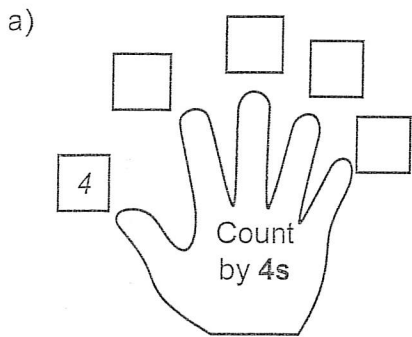
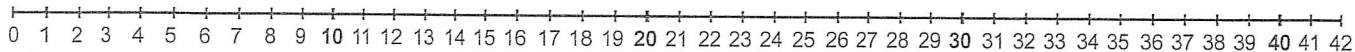
1. Draw arrows to find the product by skip counting.

a)  $4 \times 2 =$

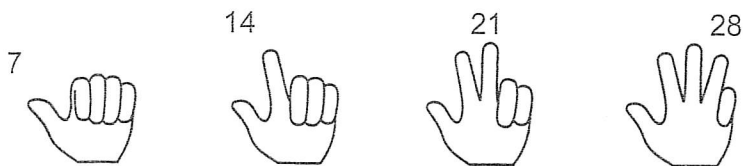
b)  $3 \times 4 =$



2. Use the number line to skip count by 4s, 6s, and 7s. Fill in the boxes below as you count.



3. Find the product by skip counting on your fingers. Use the hands from Question 2 to help:



until you raise 4 fingers      count by 7s

$4 \times 7 = 28$

a)  $3 \times 5 =$

b)  $5 \times 2 =$

c)  $3 \times 4 =$

d)  $3 \times 6 =$

e)  $1 \times 7 =$

f)  $3 \times 7 =$

g)  $3 \times 3 =$

h)  $6 \times 1 =$

i)  $2 \times 7 =$

j)  $5 \times 5 =$

k)  $2 \times 2 =$

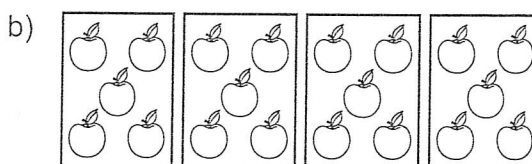
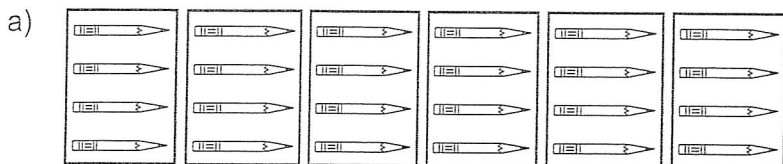
l)  $7 \times 1 =$

m)  $4 \times 4 =$

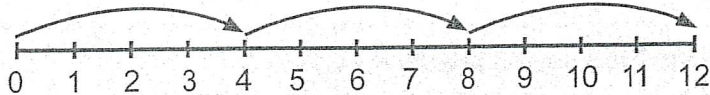
n)  $4 \times 6 =$

o)  $1 \times 6 =$

4. Find the number of items in each picture. Write a multiplication statement for each picture.



You can solve the division problem  $12 \div 4 = ?$  by skip counting on a number line.

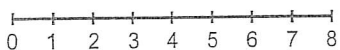


The number line shows that it takes three skips of size 4 to get 12.

$$4 + 4 + 4 = 12 \quad \text{so} \quad 12 \div 4 = 3$$

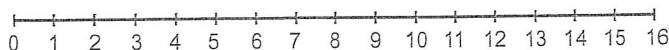
5. Use the number line to find the answer to the division problem. Be sure to draw arrows to show your skip counting.

a)



$8 \div 2 = \underline{\hspace{2cm}}$

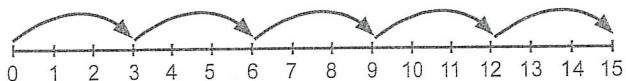
b)



$16 \div 8 = \underline{\hspace{2cm}}$

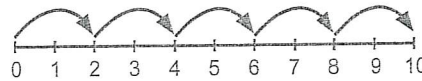
6. What division equation does the picture represent?

a)



\_\_\_\_\_

b)



\_\_\_\_\_

You can also find the answer to a division question by skip counting on your fingers.

For example, to find  $45 \div 9$ , count by 9s until you reach 45. The number of fingers you have up when you say "45" is the answer.



$$\text{So } 45 \div 9 = 5$$

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

a)  $35 \div 5 = \underline{\hspace{1cm}}$     b)  $12 \div 6 = \underline{\hspace{1cm}}$     c)  $32 \div 8 = \underline{\hspace{1cm}}$     d)  $21 \div 7 = \underline{\hspace{1cm}}$     e)  $45 \div 5 = \underline{\hspace{1cm}}$

f)  $36 \div 4 = \underline{\hspace{1cm}}$     g)  $25 \div 5 = \underline{\hspace{1cm}}$     h)  $42 \div 6 = \underline{\hspace{1cm}}$     i)  $27 \div 3 = \underline{\hspace{1cm}}$     j)  $16 \div 2 = \underline{\hspace{1cm}}$

k)  $36 \div 6 = \underline{\hspace{1cm}}$     l)  $35 \div 7 = \underline{\hspace{1cm}}$     m)  $18 \div 3 = \underline{\hspace{1cm}}$     n)  $21 \div 3 = \underline{\hspace{1cm}}$     o)  $40 \div 8 = \underline{\hspace{1cm}}$

8. There are 24 flowers in 6 bouquets. How many flowers are in each bouquet? \_\_\_\_\_

9. 36 trees are in 9 rows. How many trees are in each row? \_\_\_\_\_

10. Amy uses 8 pencils in a month. How many months will she take to use 32 pencils? \_\_\_\_\_

# RP6-5 Mental Math and the Standard Method for Multiplication

This is how Leela multiplies  $4 \times 22$ :

She rewrites 22 as a sum:  $22 = 20 + 2$

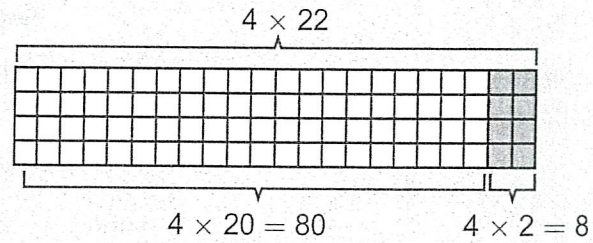
She multiplies 4 by 20:  $4 \times 20 = 80$

She multiplies 4 by 2:  $4 \times 2 = 8$

She adds the two results:  $80 + 8 = 88$

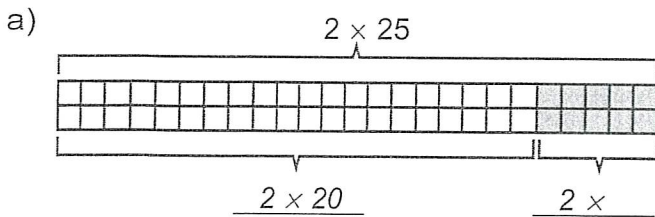
Leela concludes that  $4 \times 22 = 88$ .

This picture shows why Leela's method works:

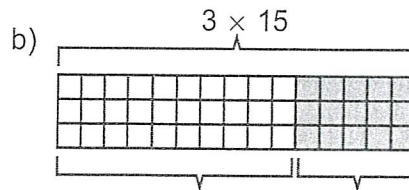


$$4 \times 22 = (4 \times 20) + (4 \times 2) = 80 + 8 = 88$$

1. Use the picture to write the multiplication expression as a sum.



$$2 \times 25 = (2 \times \underline{\quad}) + (2 \times \underline{\quad})$$



$$3 \times 15 = (\underline{\quad}) + (\underline{\quad})$$

2. Multiply using Leela's method.

a)  $5 \times 13 = \underline{5 \times 10} + \underline{5 \times 3} = \underline{50 + 15} = \underline{65}$

b)  $4 \times 21 = \underline{\quad} + \underline{\quad} = \underline{\quad} = \underline{\quad}$

c)  $3 \times 43 = \underline{\quad} + \underline{\quad} = \underline{\quad} = \underline{\quad}$

d)  $2 \times 432 = \underline{2 \times 400} + \underline{2 \times 30} + \underline{2 \times 2} = \underline{800 + 60 + 4} = \underline{864}$

e)  $3 \times 312 = \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} = \underline{\quad}$

f)  $4 \times 321 = \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} = \underline{\quad}$

3. Multiply in your head by multiplying the digits separately.

a)  $3 \times 12 = \underline{\quad}$     b)  $3 \times 52 = \underline{\quad}$     c)  $6 \times 31 = \underline{\quad}$     d)  $7 \times 21 = \underline{\quad}$

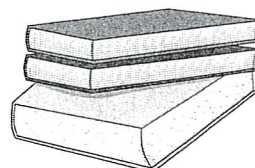
e)  $5 \times 31 = \underline{\quad}$     f)  $3 \times 42 = \underline{\quad}$     g)  $6 \times 51 = \underline{\quad}$     h)  $2 \times 44 = \underline{\quad}$

i)  $4 \times 521 = \underline{\quad}$     j)  $3 \times 621 = \underline{\quad}$     k)  $5 \times 411 = \underline{\quad}$     l)  $2 \times 444 = \underline{\quad}$

m)  $3 \times 632 = \underline{\quad}$     n)  $4 \times 422 = \underline{\quad}$     o)  $4 \times 212 = \underline{\quad}$     p)  $2 \times 421 = \underline{\quad}$

a) Stacy placed 821 books in each of 4 bookshelves. How many books did she place altogether?

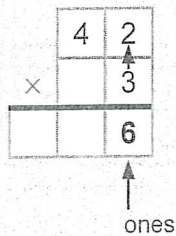
b) David put 723 pencils in each of 3 boxes. How many pencils did he put in the boxes?



How to solve  $3 \times 42 = 3 \times 40 + 3 \times 2$   
 $= 3 \times 4 \text{ tens} + 3 \times 2 \text{ ones}$

**Step 1:**

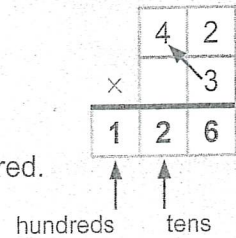
Multiply the ones digit by 3  
 $(3 \times 2 \text{ ones} = 6 \text{ ones})$ .



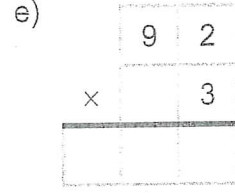
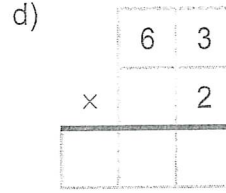
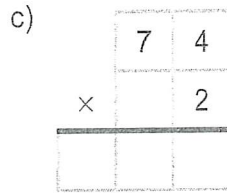
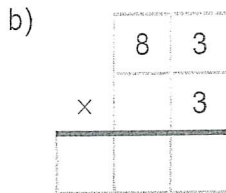
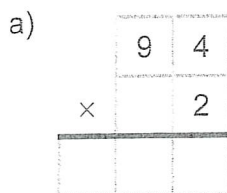
**Step 2:**

Multiply the tens digit by 3  
 $(3 \times 4 \text{ tens} = 12 \text{ tens})$ .

Regroup 10 tens as 1 hundred.



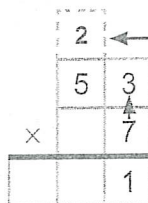
5. Use **Steps 1 and 2** to find the product.



How to solve  $7 \times 53 = 7 \times 50 + 7 \times 3$   
 $= 7 \times 5 \text{ tens} + 7 \times 3 \text{ ones}$

**Step 1:**

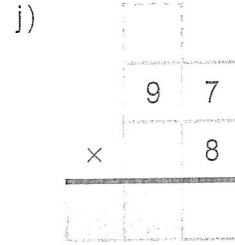
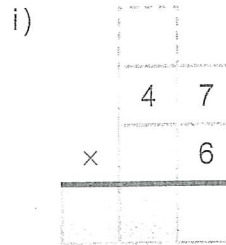
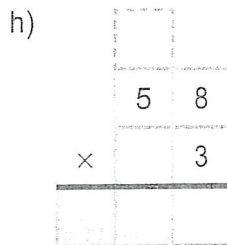
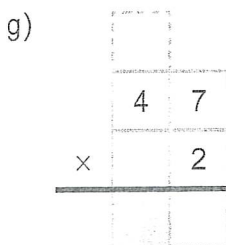
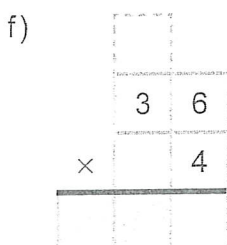
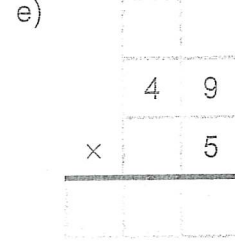
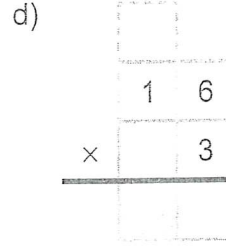
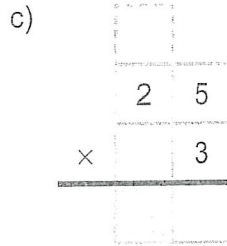
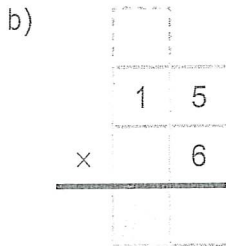
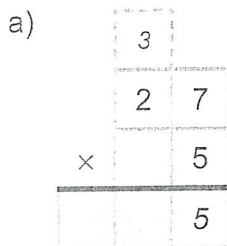
Multiply 3 ones by 7  
 $(7 \times 3 = 21)$ .



**Step 2:**

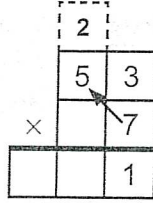
Regroup 20 ones as 2 tens.

6. Complete **Steps 1 and 2** of the multiplication.

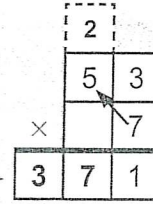


**Step 3:**

Multiply 5 tens by 7  
 $(7 \times 5 \text{ tens} = 35 \text{ tens})$ .

**Step 4:**

Add 2 tens to the result  
 $(35 + 2 = 37 \text{ tens})$ .



7. Complete **Steps 3 and 4** of the multiplication.

a)

	1	
	2	4
×		3
	7	2

b)

	4	
	3	5
×		9
		5

c)

	2	
	1	5
×		5
		5

d)

	1	
	7	3
×		5
		5

e)

	4	
	8	9
×		5
		5

3. Complete **all steps** of the multiplication.

a)

	3	5
×		9

b)

	3	5
×		6

c)

	1	5
×		7

d)

	2	5
×		8

e)

	2	4
×		5

1. Multiply by regrouping ones as tens.

a)

	2	2	7
×			3

b)

	1	1	6
×			5

c)

	2	2	4
×			3

d)

	1	1	9
×			5

e)

	3	2	8
×			3

0. Multiply by regrouping when you need to.

a)

	2	3	7
×			5

b)

	7	5	6
×			3

c)

	5	2	8
×			2

d)

	5	3	2
×			7

e)

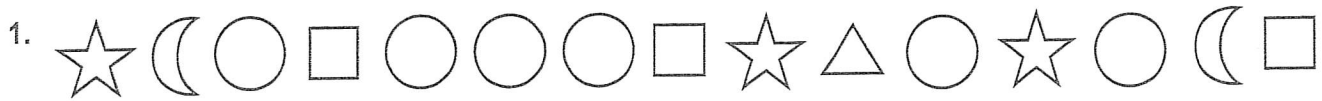
	2	1	3
×			8

1. A dog is 13 years old. Multiply that by 7 to estimate the dog's age in human years.

2. Anna borrowed a library book for 21 days. She reads 9 pages each day. If the book is 165 pages long, will she need to renew the book?

# RP6-6 Introduction to Ratios

A **ratio** is a comparison of two quantities.

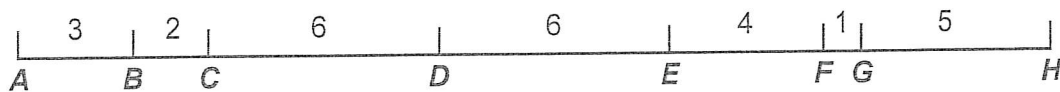


- a) The ratio of moons to circles is 2 : 6      b) The ratio of triangles to moons is      :       
 c) The ratio of stars to squares is      :           d) The ratio of squares to circles is      :       
 e) The ratio of squares to moons is      :           f) The ratio of squares to figures is      :

2. Write the number of vowels compared to the number of consonants in the following words.

- a) apple 2 : 3      b) banana      :       
 c) orange      :           d) pear      :

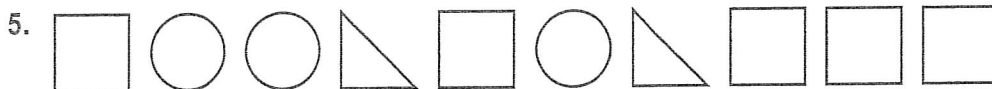
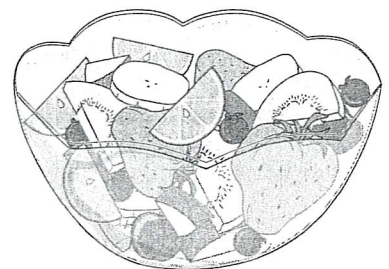
3. Write the ratio of the lengths.



- a)  $AB$  to  $DE$       :           b)  $BC$  to  $CD$       :           c)  $EF$  to  $FG$       :       
 d)  $EF$  to  $BC$       :           e)  $AB$  to  $GH$       :           **BONUS** ▶  $AB$  to  $EG$       :

4. To make fruit salad, you need 4 cups of apples, 2 cups of oranges, and 3 cups of bananas.

- a) How many cups do you need in total?       
 b) What is the ratio of cups of apples to cups of fruit salad?      :



- a) In the above pattern, what does the ratio 2 : 3 describe?  
 \_\_\_\_\_

- b) What does the ratio 5 : 10 describe?  
 \_\_\_\_\_

6. Build a model or draw a picture that could be described by the ratio 3 : 4.

# RP6-7 Introduction to Ratio Tables

1. Each column was made by skip counting by a number. Complete each column.

a) 

4
8
12

    b) 

5
10

    c) 

3
9

    d) 

2
8

    e) 

7
21

    f) 

12
24

Michael makes orange paint by mixing 1 cup of red paint for every 3 cups of yellow paint. He records the number of cups in a **ratio table**.

In a ratio table, you must multiply the numbers in the **first row** by the same number to get another row.

	Cups of Red	Cups of Yellow
	1	3
← ×2	2	6
← ×3	3	9
← ×4	4	12

2. Use skip counting or multiplication to complete a ratio table for each ratio.

a) 4 : 1

4	1
8	2
12	3
16	4

b) 1 : 2

1	2
2	4

c) 3 : 1

3	1

d) 1 : 7

1	7

e) 2 : 3

2	3

f) 5 : 2

5	2

g) 6 : 4

6	4

h) 3 : 5

3	5

Find the missing number(s) in each ratio table.

a) 2 : 7

2	7
4	14
6	

b) 4 : 1

4	1
8	2
	3

c) 3 : 2

3	2
	4
9	

**BONUS** ▶ 6 : \_\_\_\_\_

6	
12	10
18	15

4. Jackie created an increasing pattern with squares and recorded the number of squares in a table.

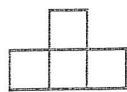


Figure 1

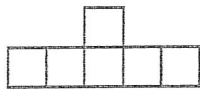


Figure 2

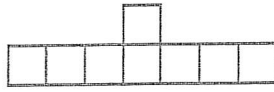


Figure 3

Figure	# of Squares
1	4
2	6
3	8

Is this a ratio table? \_\_\_\_\_ Explain how you know. \_\_\_\_\_

5. Circle the table(s) that is/are a ratio table.

7	3
14	6
21	9
28	12

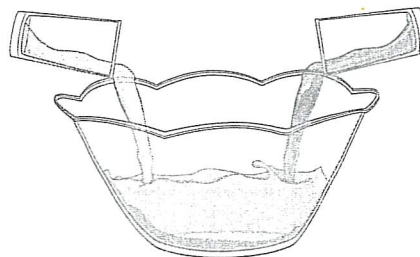
4	2
8	5
12	8
16	11

6	5
12	10
18	15
24	20

1	5
2	6
3	7
4	8

6. Don makes punch. He needs 5 cups of ginger ale for every 3 cups of cranberry juice. Use the following ratio table to find out how many cups of ginger ale he needs for 9 cups of cranberry juice.

Cups of Ginger Ale	Cups of Cranberry Juice
5	3



**BONUS** ▶ In Question 6, how many cups each of ginger ale and cranberry juice does Don need to make 40 cups of punch? Use the following ratio table to find out.

Cups of Ginger Ale	Cups of Cranberry Juice	Cups in Total
5	3	8

# RP6-8 Unit Rates

In a **unit rate**, one quantity is equal to 1.  
 For example, "30¢ for each apple" is a unit rate.



1. Complete the table for each rate.

a) Each ticket costs \$4.

# of Tickets	Cost (\$)
1	4
2	8
3	12

b) 3 hours of practice every day c) 25 students in each class

Time (h)	# of Days
3	1
6	2

# of Students	# of Classes

d) Each girl has 5 flowers.

# of Girls	# of Flowers

e) 60 miles every hour

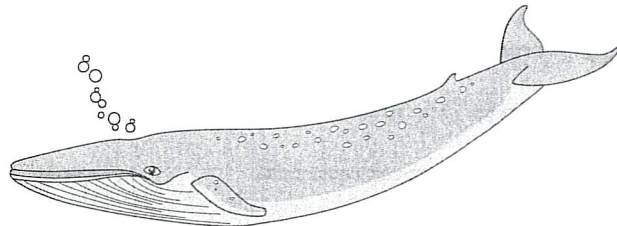
Time (h)	Distance (mi)
1	60

f) 6 cards for each boy

# of Cards	# of Boys

2. A blue whale typically travels 12 miles every hour. Use the following table to find out how long it takes for a blue whale to travel 48 miles.

Distance (mi)	Time (h)
12	1



3. Multiply to find the missing information.

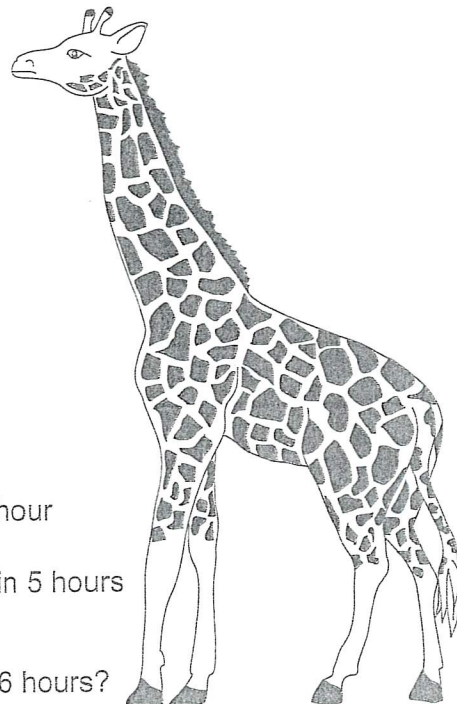
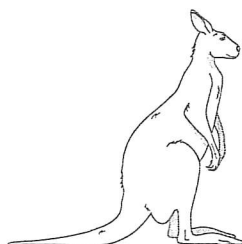
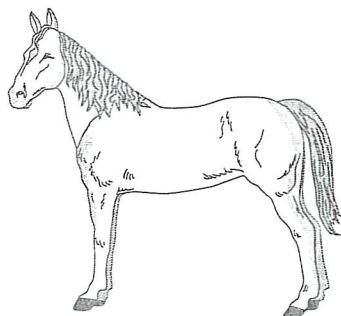
a) 1 book costs \$5  
 $\times 4$  4 books cost \$20  $\times 4$

b) 3 miles in 1 hour  
 \_\_\_\_\_ miles in 5 hours

c) 1 teacher for 25 students  
 3 teachers for \_\_\_\_\_

4. Measure the height of each picture. Then find the height of each animal in real life if 1 cm in the picture represents 50 cm in real life.

- a) Height of picture \_\_\_\_\_ cm      b) Height of picture \_\_\_\_\_ cm      c) Height of picture \_\_\_\_\_ cm  
 Height of animal \_\_\_\_\_ cm      Height of animal \_\_\_\_\_ cm      Height of animal \_\_\_\_\_ cm



5. Find the missing information.

- a) \$15 allowance in 1 week  
 \_\_\_\_\_ allowance in 4 weeks
- b) 60 miles in 1 hour  
 \_\_\_\_\_ miles in 5 hours

6. David earns \$11 per hour for mowing lawns. How much will he earn in 6 hours?

7. The fuel economy of a car (how far it can go with a unit of gas) is reported in miles per gallon (MPG). Car A has a fuel economy of 30 MPG and Car B has a fuel economy of 40 MPG.

a) Complete the tables to find out which car uses less gas for a 120-mile trip.

Car A

Gas Used (gal)	Distance (mi)
1	30

Car B

Gas Used (gal)	Distance (mi)
1	40

b) Suppose gas costs \$4 for every gallon. How much will the gas for the trip cost?

For Car A: \_\_\_\_\_      For Car B: \_\_\_\_\_

c) Which car has a better fuel economy? \_\_\_\_\_ Explain how you know. \_\_\_\_\_

# RP6-9 Finding Unit Rates

1. Divide to find the missing information.

a) 6 mangoes cost \$18

b) 4 cakes cost \$16

c) 5 pears cost \$20

$\div 6$   
1 mango costs \_\_\_\_\_

1 cake costs \_\_\_\_\_

1 pear costs \_\_\_\_\_

d) 3 notebooks cost \$24

e) 2 jackets cost \$20

**BONUS** ▶ 150 miles per 5 gallons

1 notebook costs \_\_\_\_\_

1 jacket costs \_\_\_\_\_

\_\_\_\_\_ miles per 1 gallon

John paid \$10 for 5 hot dogs. He wants to know how much 1 hot dog costs.

**Step 1:** He makes a chart showing the cost for each quantity of hot dogs.

He writes a question mark (?) for the missing quantity.

**Step 2:** He finds the number being divided by in the first column.

Then he divides by that number in the second column to find the missing number.

John finds that 1 hot dog costs \$2.

Hot Dogs	Costs (\$)
5	10
1	?

Hot Dogs	Costs (\$)
5	10
1	2

a) Ron earns \$66 babysitting for 6 hours.  
How much does he earn in an hour?

b) Tina earns \$75 cutting lawns for 5 hours.  
How much does she earn in an hour?

Find the unit rate.

a) 4 kg of rice for 24 cups of water

b) 36 miles in 3 hours

1 kg of rice for \_\_\_\_\_ cups of water

\_\_\_\_\_ miles in 1 hour

Find the unit rate from each table.

# of Tickets	Cost (\$)
3	15
4	20
5	25

Time (h)	Distance (mi)
2	50
3	75
4	100

# of Buses	# of Students
2	40
4	80
8	160

a)  for each ticket

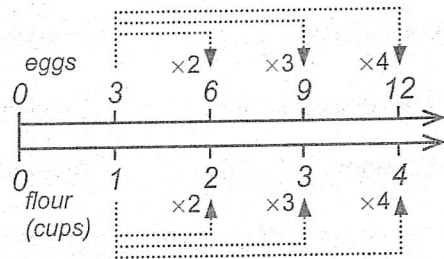
b)  miles every hour

c)  students in each bus

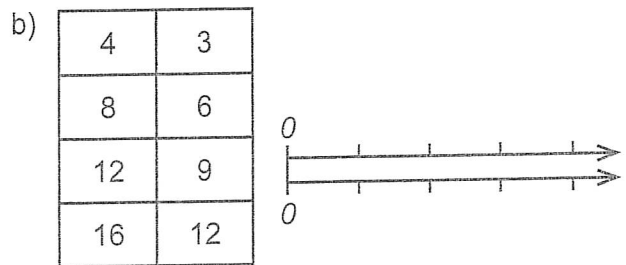
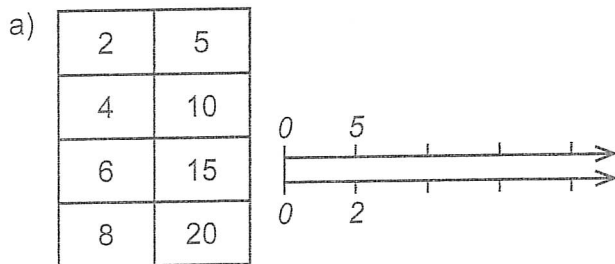
# RP6-10 Double Number Line Diagrams

Rose uses 3 eggs for each cup of flour to make a cake. Instead of using a table, she records the number of eggs and cups of flour on a horizontal double number line diagram.

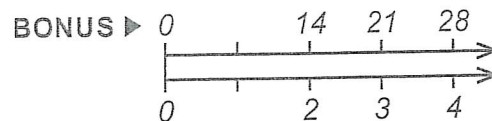
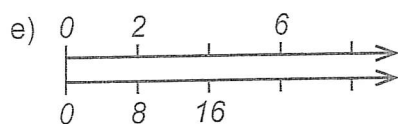
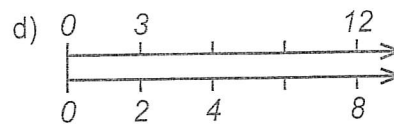
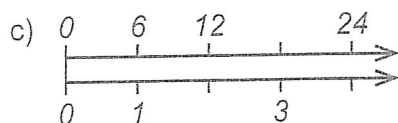
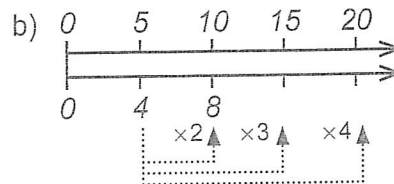
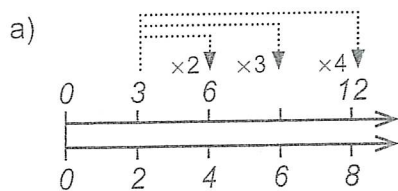
Flour (cups)	Eggs
1	3
2	6
3	9
4	12



1. Make a double number line diagram for each table.



2. Find the missing numbers in each double number line diagram.



3. Sam drives 60 miles every hour. He is driving to his uncle's house 300 miles away. Use the following double number line diagram to find out how long it takes to get there.

