CORNERSTONE JUNIOR SCHOOL - MUKONO
P.O. Box 704 Mukono. Tel: 0772485711/0786809463,
Email: cornerstonejuniorschool@gmail.com

P.3 MATHEMATICS SELF STUDY LESSON NOTES SET 2

Lesson 1

TOPIC: Operations on whole numbers

SUB- TOPIC: Multiplication by 2 and 3

Learning outcomes

By the end of this lesson you should be able to:

- Multiply using repeated addition or grouping.
- Multiply in the correct place values.
- Identify the correct place values of numbers.

Introduction:

- Please recite table 3 two times.
- I hope you had the following values when reciting table 3. If at all you failed, recite it one more time.3,6,9,12,15,18,21,24,27,30,33,36

Multiplication by 2 and 3

- The result you get after multiplying numbers is called a **product.**
- When they ask you to find the product of numbers, it means you have been asked to multiply the given numbers.
- When multiplying two numbers, the first number represents the number of groups and the second number represents the items in each group.

Examples

1. Multiply 6 x 2.
   Solution

   6 x 2 = 6 groups of 2

   =2 + 2 + 2 + 2 + 2 + 2

   = 12

2. Work out:4 x 3
   Solution
   4 x 3 = 4 groups of 3.

   = 3 + 3 + 3 + 3

   = 12

Multiplying numbers vertically

- Multiplying numbers vertically makes it easy to multiply numbers with more than one digit.
- However, when you get an answer with two digits, remember to carry/regroup the digit under tens to the next place value as we did in addition.

Examples

1. Work out 35 x 4.
   Solutionside work.

35 x 4 =

```
    2
    3   5
    X   4
   -------
   1 4 0
   -------
```

4 x 5 = 20
3 x 4 = 12 + 2
= 14

-In the first step, multiply 4 by 5 which is in the ones place value.

-It gives you an answer which is 20. Since 20 has two digits, write zero and carry 2 as shown in the example.

Multiply 4 by 3 which is under the tens place value. However, you must add the 2 that you carried to the result. ie, 12 +2 =14. Since you don't have any other digit to carry to, the 14 is then written as it is.

2. A teacher gave out 3 books to each of the 44 pupils in P.3 Red. How many books were given to the whole class?
   Solution **Side work**

44 x 3 =

```
    1
    4   4
    X   3
   -------
   1 3 2
   -------
```

4 x 3 = 12
4 x 3 = 12 + 1
= 13

Exercise

1. Multiply
   $$\begin{array}{r} 27 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$
2. A book has 48 pages. How many pages do 4 books have?
3. A stool has 3 legs. How many legs do 34 stools have?
4. A girl has 2 ears, how many ears do 15 girls have altogether?
5. Find the value of 3 threes
6. Multiply 33 x 4
7. Find the product of 12 and 9
8. A pupil walks 3Km every day how many km does the pupil walk in 56 days?
9. Complete the table below.

X	4	8	5	0	7	9
3	_____	_____	_____	_____	_____	_____

LESSON 2

TOPIC: Operations on whole numbers

SUB- TOPIC: Multiplication by 4 and 5 to the place value of thousands.

Learning outcomes

By the end of this lesson, you should be able to:

- Multiply using the correct place value.
- Identify the correct place value of numbers**.**
- Regroup/carry where necessary.

INTRODUCTION;

- Please recite table 4
- Hopefully your recitation gave you the values as 4**, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48.** If you failed at any step, recite it again two more times.

Multiply by 4 and 5

Examples

1. Multiply 4675 by 4.

2	3	2	
4	6	7	5
x			4
18	7	0	0

Side work

5 x 4 = 20
7 x 4 = 28+2
= 30

6 x 4 = 24 + 3
= 27

- Begin by multiplying 4 with the digit in the ones place value.ie, 4 x 5 = 20. Write the digit under ones which is 0 and carry 2 to the next place value.
- Multiply through other numbers until the last place value which is thousands

2. Find the product of 2 9 2 0

2	9	2	0
x			4
10	6	8	0

4 x 4 = 16 + 2

2 x 4 = 8

2 x 4 = 8

9 x 4 = 36

2 x 4 = 8 + 2

= 10

-Use the guidelines in example 1 to guide you through this example.

Activity

1. Find the product of 4675 and 4
2. What is 1000 x 4 =
3. 4 classes contribute money to buy a ball. If each class contributes 7876. How much money was contributed?
4. Find the value of 4 threes
5. A car has three wheels how many wheels do 20 cars?
6. Each child in the class was given 4 books how many books were given to 385 pupils?

7. Our school uses 245 kgs of maize flour in a day. How many kgs of maize flour does the school use in 4 days?
8. A family uses 28 litres of milk daily, how many litres will the family use in 5 days?
9. Work out

   3 5 6 2 1 2 6 5

   X 4 X 5

   _____ _____

LESSON 3

TOPIC: Operation on whole numbers

SUB TOPIC: Multiply by 5 and 6 using groups

Learning outcomes

By the end of this lesson, you should be able to:

- Multiply using groups.
- Find the product.

Introduction:

- Multiplication is repeated addition. This means that the product can be obtained by repeatedly adding the items in the formed groups.
- Let's look at table 6 using repeated addition.

1x 6 = 1 six = 6

2 x 6 = 2 sixes = 6 + 6 = 12

3 x 6 = 3 sixes = 6 + 6 + 6 = 18

4 x 6 = 4 sixes = 6 + 6 + 6 + 6 = 24

5 x 6 = 5 sixes = 6 + 6 + 6 + 6 + 6 = 30

6 x 6 = 6 sixes = 6 + 6 + 6 +6 + 6 + 6 = 36

7 x 6 = 7 sixes = 6 + 6 + 6 + 6 + 6 + 6 + 6 = 42

8 x 6 = 8 sixes = 6 + 6 + 6 +6 + 6 + 6 + 6 + 6 = 48

9 x 6 = 9 sixes = 6 + 6 + 6 +6 + 6 + 6 + 6 + 6 + 6 = 54

10 x 6 = 10 sixes = 6 + 6 + 6 +6 + 6 + 6 + 6 + 6 + 6 + 6 = 60

11 x 6= 11 sixes = 6 + 6 + 6 +6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 66

12 x 6 = 12 sixes = 6 + 6 + 6 +6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 72

Example

1. Work out 8 X 6 using repeated addition.
   solution

   8 X 6 means 8 groups of 6

   8 X 6 = 6+6+ 6+ 6 + 6+6+6 + 6

=48

2. Multiply the following

```
   2    3    3
   9    4    5    6
   x                6
 ------------------------
5  6   7    3        6
```

Activity

1. Find the product of 4676 and 6

4	6	7	6
x			6

2. work out 4 X 6 using repeated addition.
3. work out 3 X 6 using repeated addition.
4. There are 23 pupils in a class. Each pupil is given 6 pupils. How many pencils will they get altogether?

Lesson 4

TOPIC : Operations on whole numbers
SUB- TOPIC: Multiplication by 7 and 8 using groups
Learning outcomes
By the end of the lesson the learner will be able to:

- Identify place values of number.
- Multiply using group of 7 and 8
- Use repeated addition to multiply

Introduction:

- In the previous lesson, we learnt how to multiply using repeated addition using groups of 6.
- Let us learn another grouping of 7 and 8.

Multiples by 7 and 8 using groups and repeated addition

- Remember, the first number represents the number of groups and the second number represents the items in each group.

1x 7 = 1 group of seven = 7

2 x 7 = 2 groups of seven= 7 + 7 = 4

3 x 7 = 3 groups of seven = 7 + 7 + 7 = 21

4 x 7 = 4 groups of seven = 7 + 7 + 7 + 7 = 28

5 x 7 = 5 groups of seven = 7 + 7 + 7 + 7 + 7 = 35

6 x 7 = 6 groups of seven = 7 + 7 + 7 +7 + 7 + 7 = 42

7 x 7 = 7 groups of seven = 7 + 7 + 7 + 7 + 7 + 7 + 7 = 49

8 x 7 = 8 groups of seven = 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 = 54

9 x 7 = 9 groups of seven = 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 = 63

10 x 7 =10 groups of seven = 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 = 70

11 x 7=11 groups of seven = 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 77

12 x 7 = 12 groups of seven = 7 + 7 + 7 +7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 84

Multiply by 8

1x 8 = 1group of eight = 8

2 x 8 = 2 groups of eight = 8 + 8 = 16

3 x 8 = 3 groups of eight = 8 + 8 + 8 = 24

4 x 8 = 4 eight = 8 + 8 + 8+ 8 = 32

5 x 8 = 5 groups of eight = 8 + 8 + 8 + 8 + 8 = 40

6 x 8 = 6 groups of eight = 8 + 8 + 8 +8 + 8 + 8 = 48

7 x 8 = 7 groups of eight = 8 + 8 + 8 + 8 + 8 + 8 + 8 = 56

8 x 8 = 8 groups of eight = 8 + 8 + 8 +8 + 8 + 8 + 8 + 8= 64

9 x 8= 9 groups of eight = 8 + 8 + 8 +8 + 8 + 8 + 8 + 8 + 8 = 72

10 x 8 = 10 groups of eight = 8 + 8 + 8 +8 + 8+ 8 + 8 + 8 + 8 + 8 = 80

11 x 8 = 11 groups of eight = 8 + 8 + 8 +8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 88

12 x 8 = 12 groups of eight = 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 96

Activity

1. Find the product of 4316 and 7

4	3	1	6
x			7

2. Multiply 2509 x 8
3. Find the product of 1210 and 8
4. Eight buses were used to take children for a trip. If each bus carried 35 pupils, how many pupils went for the trip altogether?
5. How many days are there in 74 weeks?
6. Multiply 2 x 8 using repeated addition

LESSON 5

TOPIC : **Operations on whole numbers**

SUB- TOPIC: **Multiplication by 9 and 10 using groups**

Learning outcomes

By the end of this lesson, you should be able to:

- Identify place values of number.
- Multiply a 4-digit number by 9.
- Interpret and solves word application.

Introduction:

- Please recite table 9
- Hopefully your recitation gave you the values as 9**, 18, 27, 36, 45, 54, 63, 72 81, 90,99, 108.** If you failed at any step, recite it again two more times.

Multiples by 9 and 10

Examples

1. Multiply 42 by 9.

```
 1
 4   2
 x   9
-----
3 7  8
-----
```

Side work

2 x 9= 18

4 x 9 = 36+1

= 3 7

-Remember, multiplication starts from the ones place value.

-When you get a two-digit answer, eg 2 x 9 = 18, write the digit under ones (8) and carry the one under tens (1).

-Repeat the calculations throughout all the place values

2. Multiples by 10 using groups and repeated addition

1x 9 = 1group of nine = 9

2 x 9 = 2 groups of nine = 9 + 9 = 18

3 x 9 = 3 groups of nine = 9 +9 + 9 = 27

4 x 9 = 4 groups of nine = 9 + 9 + 9 + 9 = 36

5 x 9 = 5 groups of nine = 9 + 9 + 9 + 9 + 9 = 45

6 x 9 = 6 groups of nine = 9 + 9 + 9 +9 + 9 + 9 = 54

7 x 9 = 7 groups of nine = 9 + 9 + 9 + 9 + 9 + 9 + 9 =63

8 x 9 = 8 groups of nine = 9 + 9 + 9 +9 + 9 + 9 + 9 + 9 = 72

9 x 9 = 9 groups of nine = 9+ 9 + 9 +9 + 9 + 9 + 9 + 9 + 9 = 81

10 x 9 = 10 groups of nine = 9 + 9 + 9 +9 + 9 + 9 + 9 + 9 + 9 + 9 = 90

11 x 9= 11 groups of nine = 9 + 9 + 9 +9 + 9 +9 + 9 + 9 + 9 + 9 + 9 = 99

12 x 9 = 12 groups of seven = 9 + 9 + 9 +9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 108

Multiples by 10 using groups and repeated addition

1x 10 = 1group of ten = 20

2 x 10 = 2 groups of ten = 10 + 10 = 20

3 x 10 = 3 groups of ten = 10 +10 + 10 = 30

4 x 10 = 4 groups of ten = 10 + 10 + 10 + 10 = 40

5 x 10 = 5 groups of ten = 10 + 10 + 10 + 10 + 10 = 50

6 x 10 = 6 groups of ten = 10+ 10 + 10 +10 + 10 + 10 = 60

7 x 10 = 7 groups of ten = 10+ 10 + 10 + 10 + 10 + 10 + 10 =70

8 x 10 = 8 groups of ten = 10 + 10 + 10 +10 + 10 + 10 + 10 + 10 = 80

9 x 10 = 9 groups of ten = 10+ 10 + 10 +10 + 10 + 10 + 10 + 10 + 10 = 90

10 x 10 = 10 groups of ten = 10 + 10 + 10 +10 + 10 + 10 + 10 + 10 + 10 + 10 = 100

11 x 10

12 x 10 = 12 ten = 10 + 10 + 10 +10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 120

Activity

1. Multiply

$$\begin{array}{r} 3\ \ 6 \\ \times\ \ 9 \\ \hline \\ \hline \end{array}$$

11 x 10 = _____

$$\begin{array}{r} 3\ \ 6\ \ 5 \\ \times\ \ \ \ 9 \\ \hline \\ \hline \end{array}$$

2. How many pages do 9 exercise books have if one book has 36 pages?
3. How many days are there in 74 weeks
4. Multiply

$$\begin{array}{r} 2\ \ 4\ \ 5 \\ \times\ 1\ \ 0 \\ \hline \\ \hline \end{array}$$

5. Multiply using 3 X9 using repeated addition

LESSON 6

Topic : **Operations on whole numbers**

SUB- TOPIC: **Multiplication using a web**

Learning outcomes

By the end of the lesson, you should be able to:

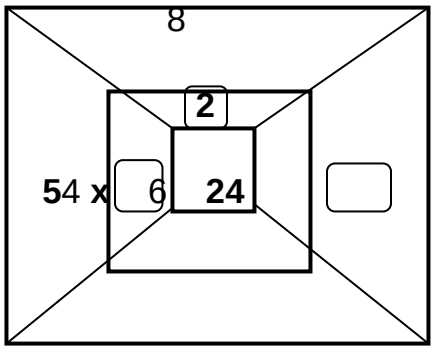
- Identify the group on a web.
- Multiply to get the answer.
- Interpret and complete the web.

Introduction:

- Recite table 5
- Hopefully your recitation gave you the values as **5,10, 15, 20, 25,30, 35, 40, 45,50, 55, 60**
- If you failed at any step, recite it again two more times.

Multiplication on a web

- On a multiplication web, the **outer part** represents **the product**.
- Remember, **the product** is the answer got after **multiplying**.
- The **inner part** represents **the multiplication table** that is being focused on. This is also the grouping done during the multiplication.
- The middle part represents **the items** that are to be put in the groups as given in the middle part.



4

16 ☐

4 x 6 = 24

4 x 4 = 16

4 x ☐ = 20

☐ = 20 ÷ 4

☐ = 5

- To get the **outer value** multiply the **inner number** with the **middle number. E.g. 4 x 6 = 24**
- To get the **middle number**, divide the **outer value** with the **innernumber.** E.g. **8 ÷ 4 = 2**

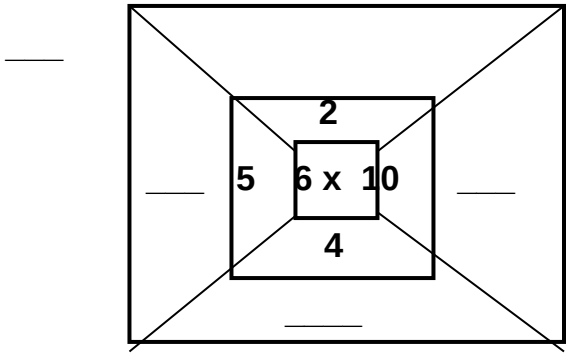
4 x ☐ = 8

☐ = 8 ÷ 4

☐ = 2

Activity

Find the missing number in the diagram belong



LESSON 7

TOPIC : Operation on whole numbers

SUB- TOPIC: Division by 2 or 3

Learning outcomes

By the end of this lesson, you should be able to:

- Identify the place value of numbers.
- Divide numbers correctly.
- Divide using long division.

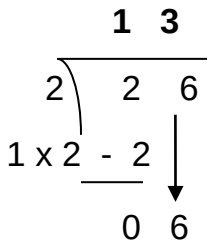
Introduction:

- Recite table 2 and table 3.
- Tables help to make division easy.
- Before you start the division, it is always important to list the multiples of the divisor.
- In an expression such as 12 ÷ 4 = 3: 12 is called **the dividend**, 4 is called **the divisor** and 3 is called **the quotient**.
- The dividend is the number that is to be shared.
- The divisor is the number that is sharing

Dividing by 2 or 3 using long division

<u>Example</u>

1. Divide 26 ÷ 2



÷ x -

2 ÷ 2 = 1

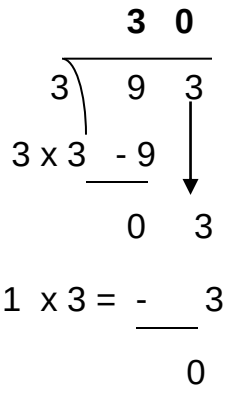
6 ÷ 2 = 3

- From the question given, 26 is the dividend and 2 is the divisor. The divisor (2) is put out side the long division symbol and the dividend (26) is written outside.
- When using long division, we divide digit by digit. i.e. for the first step, divide 2 by 2= 1. The result is written above 2. Multiply the result (1) by the divisor as shown in the example.
- Subtract the product you got from the first digit you divided. Drag down the next digit divide it by the

3 x 2 = 6

0

2. Work out 93 ÷ 3



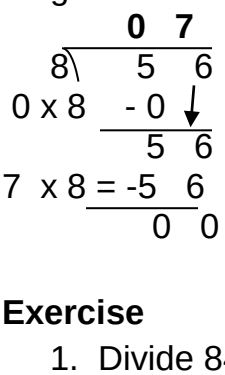
÷, x, -

9 ÷ 9 = 3

3 ÷ 3 = 0

Example 3

8 pupils divided 56 oranges equally among themselves. How many oranges did he get?



÷, x, -

5 ÷ 8 = 0

56 ÷ 8 =

- You need to note that any small dividend divided by a big divisor.
- Therefore, 5 ÷ 8 = 0 remainder 5. Write zero above 5 and multiply it by the divisor. Subtract the result from 5. Drag down 6 such that you get 56.
- Using table 8, find out the number you multiply by 8 to give you 56 and this will be 7. There fore 56÷8=7.
- Multiply the result by 8 to give you 56 which you must subtract from 56 to give you zero.

Exercise

1. Divide 840 ÷ 2
2. Divide 231 by 3
3. Share 524 oranges equally a each child get?
4. Share 80 oranges equally among 4 children. How many oranges does each child get?
5. Divide 18 ÷ 3

LESSON 8
TOPIC: Operations on the whole number
SUB- TOPIC: Division of numbers using repeated subtraction

Learning outcomes

By the end of this lesson, you should be able to

- Divide numbers using repeated subtraction.
- Interprets and solves word application.

Introduction:

- Recite table 3.
- Your results should be **3,6,9,12,15,18,21,24 27, 30.** In case you fail at any step, recite it again

Division of whole numbers using repeated subtraction.

- Repeated subtraction means that you should subtract the divisor from the dividend until the last result is zero.
- To get the answer, count the number of subtractions done up to when you got zero as your result.

Example

1. Divide: 9÷ 3, Using repeated subtraction

Solution

9 ÷ 3 = 6 ……..1st

6-3 =3……..2nd

3÷3=0……..3rd

9 ÷ 3 = 3 because we subtract 3 times.

Activity

Divide the numbers using repeated subtraction

1. 12 ÷ 4
2. 4 ÷ 2
3. 8 ÷ 2
4. 6 ÷ 3
5. 6 ÷ 2

LESSON 9
TOPIC: Operation on whole numbers
SUB-TOPIC: Division with a remainder

Learning outcomes

By the end of the lesson, you should be able to

- Divide number with a remainder.
- Work out all the steps of long division.

Long division with a remainder

- Some numbers are not exactly divisible by the given divisor whereby a remainder will be noted after division.
- However, the steps we learnt in lesson 7 and 8 remain the same to be followed. Remember, we divide digit by digit.

Examples

1. Divide; 847 ÷ 3

2 8 2 rem 1

3 | 8 4 7

2 x 3 - 6

2 4

8 x 3 = -2 4

0 0 7

2 x 3 = - 6

1

Side work

8 ÷ 3 = 2rem2

24 ÷ 3 = 8

7 ÷ 3 = 2

- The first step is to divide 8 by 3. In table 3, we don't have multiple 8 and in this case, we look for the nearest multiple which is 6. Get the number that you multiply 3 to give you 6 and that is 2.
- Write 2 above 8 and multiply it by 3 to give you 6. Subtract 6 from 8. This time round, you will get 2 which is the remainder. Drag down 4 to make the figure below 24.

2. Share 128 sweets among 7 children.

0 1 8 rem 2

7 | 1 2 8

0 x 7= -0

$^{0}\not{1}$ 12

÷, x, -

1 ÷ 7 = 0

12 ÷ 7 = 1

58 ÷ 7 =

- Follow through the steps given in example one to guide you in example 2.
-
- Remember, we divide digit by digit. And also, any small dividend divided by a bigger divisor gives zero as a quotient.

1 x 7 = - 7
5 8
8 x 7 = - 5 6
2

Activity

1. Divide 503 ÷ 3
2. Share 289 oranges equally among 4 children. How many oranges does each child get?
3. Divide 178 ÷ 5
4. Share 238 mangoes equally among 5 children. How many mangoes does each child get?
5. Work out 25 ÷ 5 using repeated subtraction.

LESSON 10

TOPIC: Operation of the whole number

SUB- TOPIC: Relationship between division and multiplication

Learning outcomes

By the end of the lesson, you should be able to

- Identify the relationship between multiplication and division.
- Divide or multiply to get the missing numbers.

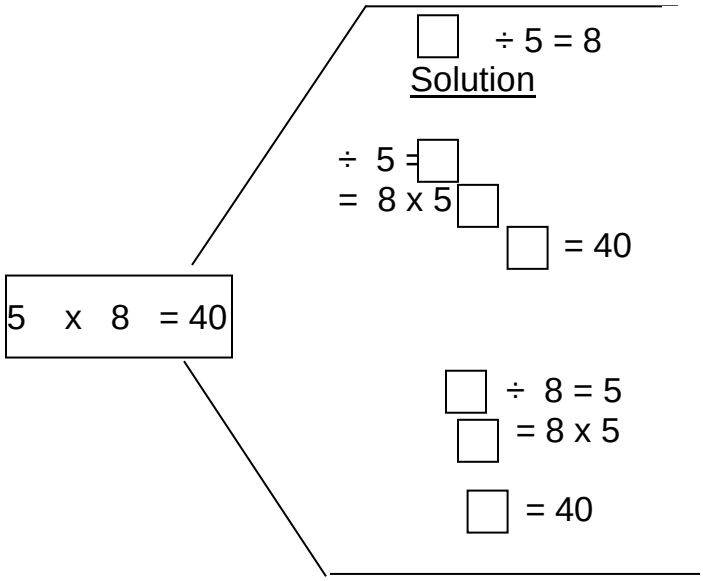
Introduction:

- Recite table 4 two times
- Your results must be **4,8, 12,16,20,24,28,32,36,40,44,48**

Filling in the missing numbers

Remember,

- In an expression such as 12 ÷ 4 = 3: 12 is called **the dividend**, 4 is called **the divisor** and 3 is called **the quotient**.
- The dividend is the number that is to be shared.
- The divisor is the number that is sharing

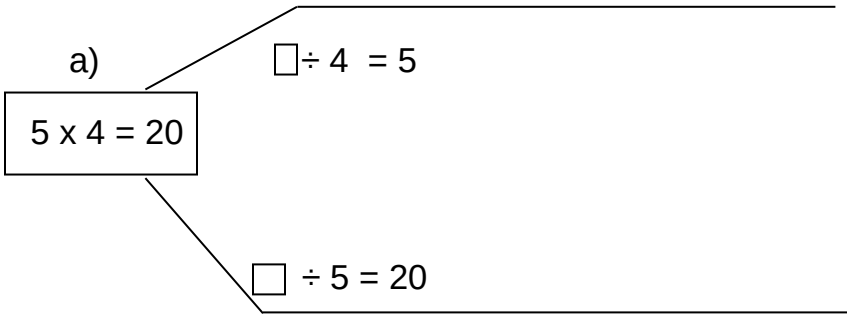


- To get the dividend, multiply the divisor by the product. ie,

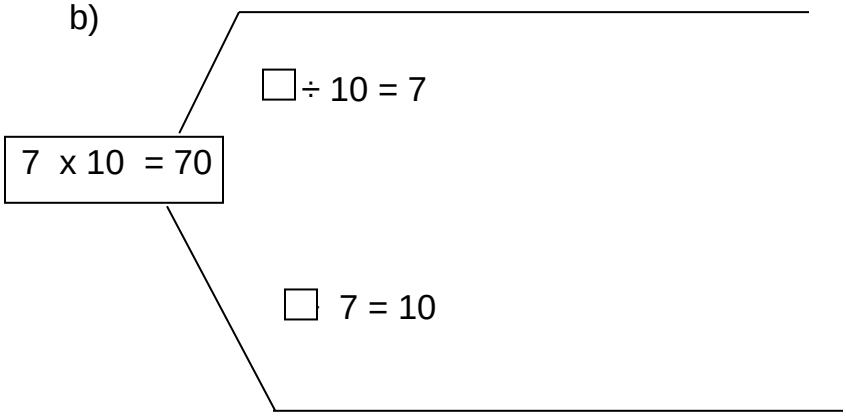
□ = 8 x 5 =40

Activity

1. Study the figures below and use it them to find the missing numbers



b)



6. Share 560 oranges equally among 5 children how many oranges did each child get?