



# Long Divisions - Worksheet

Division is done to find out how many times one number (divisor) is contained in another number (dividend). The result also represents the number in how many groups the divisor may be divided in to the number of divisor. The long division method is used when you are dividing a large number (usually three digits or more) by a two-digit (or more) number.

**Divisor:** The number which divides the other number.

**Dividend:** The number which is to be divided by the other number.

Example

$$\begin{array}{l} 1035 \div 207 \text{ --- Divisor} \\ | \\ \text{Dividend} \end{array}$$

## Doing the Long Division

Example

$$2255 \div 20$$

$$20 \overline{) 2255}$$

### Step 1:

Divide the first digit of the dividend with the divisor and right the result on top. If the first digit is smaller than the divisor you can write '0'.

$$\begin{array}{r} 0 \\ 20 \overline{) 2255} \end{array} \quad 2 < 20$$

### Step 2:

Multiply the divisor with the result and place that under the first digit.

$$\begin{array}{r} 0 \\ 20 \overline{) 2255} \\ 0 \end{array} \quad 0 * 20 = 0$$



**Step 3:**

Subtract the result from the first digit and bring down the second digit beside it.

$$\begin{array}{r} 0 \\ \hline 20 \overline{) 2255} \\ \underline{0} \\ 22 \end{array}$$

**Step 4:**

Divide this with the divisor and follow Step 1-3 until there is no digit left to bring down. If the last subtraction result is not equal to '0', the remaining number would be considered as the **remainder(R)** for the particular problem.

$$\begin{array}{r} 01 \\ \hline 20 \overline{) 2255} \\ \underline{0} \\ 22 \\ \underline{20} \end{array} \quad 1*20=20$$

$$\begin{array}{r} 01 \\ \hline 20 \overline{) 2255} \\ \underline{0} \\ 22 \\ \underline{20} \\ 25 \end{array} \quad 22-20=2 \text{ and the third digit ('5') comes down beside it.}$$

$$\begin{array}{r} 011 \\ \hline 20 \overline{) 2255} \\ \underline{0} \\ 22 \\ \underline{20} \\ 25 \\ \underline{20} \\ 55 \end{array} \quad 1*20=20; 25-20= 5 \text{ and the fourth digit ('5') comes down beside it.}$$

$$\begin{array}{r} 0112 \\ \hline 20 \overline{) 2255} \\ \underline{0} \\ 22 \\ \underline{20} \\ 25 \\ \underline{20} \\ 55 \\ \underline{40} \\ 15 \end{array} \quad \begin{array}{l} 2*20=40; 55-40= 15 \text{ and there are no digits left.} \\ 20 \text{ goes two times into } 55 \text{ and } 15 \text{ remains} \end{array}$$

Answer: 112 R 15

## Long Division word problems

### Example

Sarah has 630 barbie stickers. If she gives an equal amount to 19 friends, how many stickers will each friend get?

Note: Please round it to the nearest whole number.

### Answer

Sarah has 630 stickers in total which need to be divided ('Dividend') among 19 ('Divisor') friends equally. So, we want to find out the number of stickers each friend will get. Hence, essentially we want to divide 630 in to equal 19 groups.

We follow the basis long division steps,

$$\begin{array}{r} 033 \\ 19 \overline{) 630} \\ \underline{0} \phantom{0} \\ 63 \\ \underline{57} \\ 60 \\ \underline{57} \\ 3 \end{array}$$

So the answer of this division is 33 R 3.

But the question asked for the nearest whole number, which is 33. Hence, each of Sarah's friend will get 33 stickers (required answer) and the rest 3 would remain with Sarah.



## Practice Exercises

**Question 1:**

9)126

**Question 2:**

19)136

**Question 3:**

27)1366

**Question 4:**

13)8776

**Question 5:**

116)864

**Question 6:**

26 girls were given 130 watches to be divided equally among them. How many watches will each girl get?

**Question 7:**

Jamie has 1026 toy cars which she wants to put into 27 equal groups. How many cars will she put in each group?

**Question 8:**

A client is ordered 0.4 mg Thyroxine. Each tablet contains 200 mcg. How many tablets will you administer to the client?



## Answers

### Answer 1:

$$9)126 = 14$$

### Answer 2:

$$19)136 = 7 \text{ R } 3$$

### Answer 3:

$$27)1366 = 50 \text{ R } 16$$

### Answer 4:

$$13)8776 = 675 \text{ R } 1$$

### Answer 5:

$$116)864 = 7 \text{ R } 52$$

### Answer 6:

From the question, we get,  $26)130$

Answer: 05 watches for each of them.

### Answer 7:

From the question, we get,  $27)1026$

Answer: 38 cars in each group.

### Answer 8:

Need to convert mg to mcg

$$1 \text{ mg} = 1000 \text{ mcg}$$

$$\text{Therefore, } 0.4\text{mg} = 400 \text{ mcg}$$

Therefore, the client is ordered 400mcg of thyroxin and if each table contains 200mcg.

Then the client will receive:

$$200)400 = 2 \text{ tablets.}$$