

Long Division With Zero in the Dividend

by Monica Yuskaitis



Long Division

With Zero in the Dividend

- Long division is as simple as memorizing the people in this family.



Dad



Mom



Sister



Brother



Rover

Long Division

With Zero in the Dividend

- Each person represents a step in the long division process.



1. Divide

Dad



Sister

3. Subtract



Brother

4. Bring down



2. Multiply

Mom



Rover

**5. Repeat or
Remainder**

Step 1 in Long Division



Dad

1. Divide

- Divide 2 into first number in the dividend.
- Think how many 2's will fit into 8.
- Write that number directly above the number you divided into.

$$\begin{array}{r} 4 \\ 2 \overline{) 807} \end{array}$$

How many 2's
will go into 8?



Step 2 in Long Division



Mom

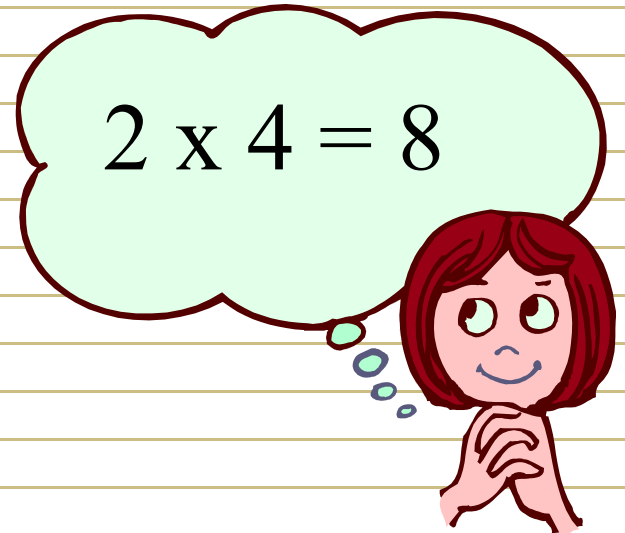
2. Multiply

$$\begin{array}{r} 2 \overline{) 807} \\ \underline{8} \\ 0 \\ \underline{0} \\ 07 \end{array}$$

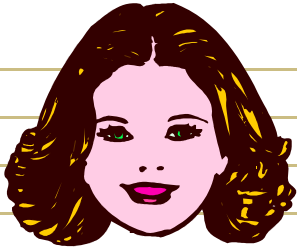
The diagram shows the long division process. A red arrow points from the divisor '2' to the first digit of the dividend '8'. A red '4' is written above the '8', and a red '8' is written below the '8' in the dividend, indicating the multiplication step.

- Multiply the divisor times the first number in the quotient.
- Write your answer directly under the 8 or the number you just divided into.

$$2 \times 4 = 8$$



Step 3 in Long Division



Sister

3. Subtract

- Draw a line under the 8.
- Write a subtraction sign next to the 8.
- Subtract 8 from 8.
- Write your answer directly below the 8.

$$\begin{array}{r} 4 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 0 \end{array}$$

Step 4 in Long Division



Brother

**4. Bring
down**

$$\begin{array}{r} 4 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 0 7 \\ \underline{0} 0 \\ 7 \end{array}$$

- Go to the next number in the dividend to the right of the 8.
- Write an arrow under the 0.
- Bring the 0 down next to the 0.

Step 5 in Long Division



Rover

5. Repeat or Remainder

- This is where you decide whether you repeat the 5 steps of division.
- If your divisor can divide into your new number, 00, or if you have numbers in the dividend that have not been brought down, you repeat the 5 steps of division.

$$\begin{array}{r} 4 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 00 \end{array}$$

Step 1 in Long Division



Dad

1. Divide

- Divide 2 into your new number, 00.
- Place your answer directly above the 0 in your quotient.

$$\begin{array}{r} 40 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \hline \end{array}$$

The diagram shows a long division problem: 2 into 807. The quotient 40 is written above the line. The 4 is above the 8, and the 0 is above the first 0. A red arrow points from the 2 to the 00 below the line. A black arrow points down from the first 0 to the 00 below the line.

Step 2 in Long Division



2. Multiply

Mom

- Multiply your divisor, 2, with your new number in the quotient, 0.
- Place your answer directly under the 00.

$$\begin{array}{r} 40 \\ 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{00} \\ 00 \end{array}$$

The diagram shows the long division process. The divisor is 2, and the dividend is 807. The quotient is 40. A red arrow points from the 4 in the quotient to the 8 in the dividend. A red arrow points from the 0 in the quotient to the 0 in the dividend. A black arrow points down from the 0 in the dividend to the 0 in the quotient. The 00 in the quotient and the 00 in the dividend are highlighted in red.

Step 3 in Long Division



Sister

3. Subtract

- Draw a line under the bottom 14.
- Draw a subtraction sign.
- Subtract & place answer under the line.

$$\begin{array}{r} 40 \\ \hline 2 \overline{) 807} \\ \underline{-8} \quad \downarrow \\ 00 \\ \underline{-00} \\ 0 \end{array}$$

Step 4 in Long Division



Brother

**4. Bring
down**

- Put an arrow under the next number, 7, in the dividend.
- Bring the 7 down next to the 0.

$$\begin{array}{r} 40 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-00} \\ 07 \end{array}$$

The diagram shows the long division process for 807 divided by 2. The quotient 40 is written above the dividend. The first step shows 2 dividing 8 to get 4, with 8 subtracted from 8. The next step shows 2 dividing 0 to get 0, with 0 subtracted from 0. The final step shows the 7 being brought down next to the 0, resulting in 07. A red arrow points from the 7 in the dividend down to the 7 in the new dividend, and another red arrow points from the 7 in the new dividend down to the 7 in the quotient.

Step 1 in Long Division



Dad

1. Divide

- Divide your divisor, 2, into your new number, 7.
- Place your answer in the quotient next to the 7.

$$\begin{array}{r} 403 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-0} \\ 07 \end{array}$$

The diagram shows the long division process. The divisor is 2, and the dividend is 807. The quotient is 403. A red arrow points from the 2 in the divisor to the 7 in the dividend, indicating the current step. A black arrow points from the 7 in the dividend down to the 7 in the quotient, indicating the placement of the answer.

Step 2 in Long Division



Mom

2. Multiply

- Multiply your divisor, 2, by your new number in the quotient, 3.
- Place your answer under the number you brought down, 7.

$$\begin{array}{r} 403 \\ 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-00} \\ 07 \\ 6 \end{array}$$

Step 3 in Long Division



Sister

3. Subtract

- Draw a line under the number 6.
- Place your subtraction sign.
- Subtract & put your answer directly under the 6.

$$\begin{array}{r} 403 \\ 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-00} \\ 07 \\ \underline{-6} \\ 1 \end{array}$$

Step 4 in Long Division



4. Bring down

Brother

- Look at your dividend to see if there are any more numbers to bring down.
- If not, move to step 5.

$$\begin{array}{r} 403 \\ 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-00} \\ 07 \\ \underline{-6} \\ 1 \end{array}$$

Step 5 in Long Division



Rover

5. Repeat or Remainder

- Since there are no more numbers to bring down & 2 will not divide into 1, you do not repeat the steps of division.
- The number left over, 1, becomes the remainder.

$$\begin{array}{r} 403 \text{ R}1 \\ \hline 2 \overline{) 807} \\ \underline{-8} \\ 0 \\ \underline{-0} \\ 0 \\ \underline{7} \\ \underline{-6} \\ 1 \end{array}$$

You did it!



You're so smart!



You're awesome!



Cool Dude!



Wolf!



$$\begin{array}{r} 403 \text{ R1} \\ 2 \overline{) 807} \\ \underline{-8} \\ 00 \\ \underline{-00} \\ 07 \\ \underline{-6} \\ 1 \end{array}$$

Credits

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