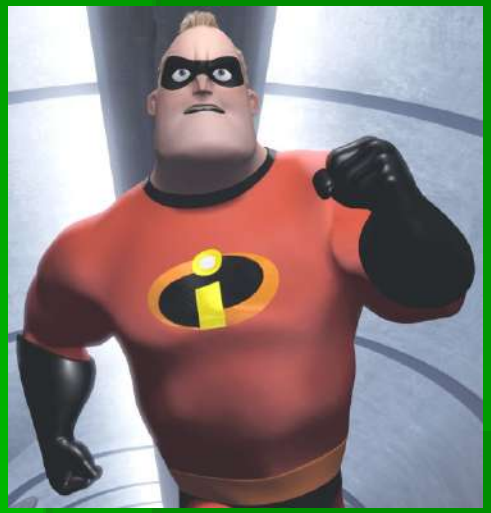
Long Division

By Dr. Calhoun

Long Division

Helpful reminder

The steps of long division are easy if you remember this super family.



Dad

Divide

Mom

Multiply

Sister

Subtract

Brother

Bring down

Rover

Repeat or **R**emainder

The Problem

$$795 \div 2$$

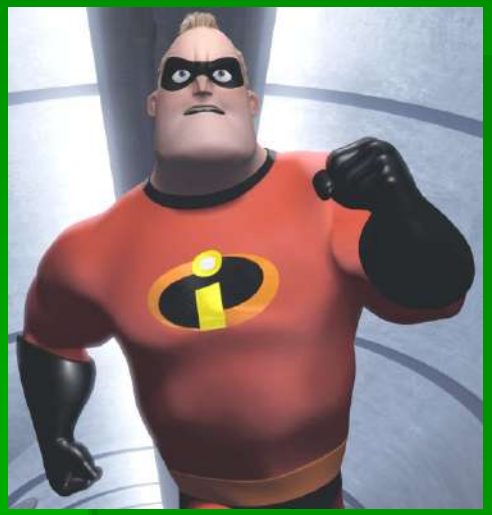
The Problem

Change it to look like this...

$$2\overline{)795}$$

Step 1. Divide

7 2 ÷



Dad

Divide

$$2\overline{)795}$$

3

Divide the 2 into the first number in the dividend.

Ask yourself how many times does 2 go into 7 without going over.

Write the number directly above the number you divided into.

Step 2. Multiply 2 x 3 = 6

Mom

Multiply

$$2\overline{)795}$$

3

6

Multiply the divisor times the first number in the quotient.

Write your answer directly under the 7 or the number you just divided into.

Step 3. Subtract 7 – 6 = 1

Sister

Subtract

$$\begin{array}{r} 3 \\ 2\overline{)795} \\ -6 \\ \hline 1 \end{array}$$

Draw a line under the 6.

Draw a minus sign.

Subtract 6 from 7.

Write the answer directly under the 6.

Step 4. Bring down Bring down the 9

Brother

Bring down

$$\begin{array}{r} 3 \\ 2\overline{)795} \\ -6 \\ \hline 19 \end{array}$$

Go to the next number in the dividend.

Draw an arrow under the 9.

Bring down the 9 and put it next to the 1.

Step 5. Repeat or Remainder Repeat

Rover

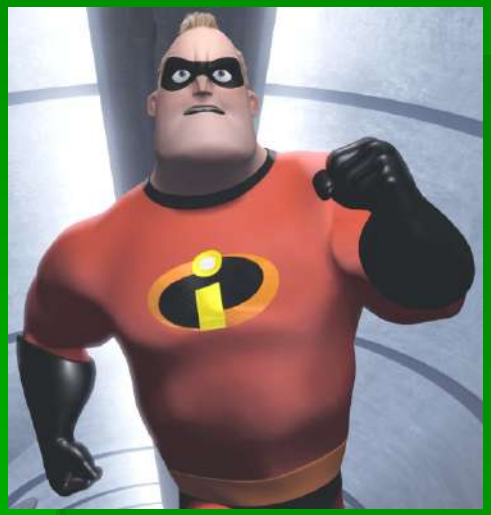
Repeat?
or
Remainder?

$$\begin{array}{r} 3 \\ 2\overline{)795} \\ -6 \\ \hline 19 \end{array}$$

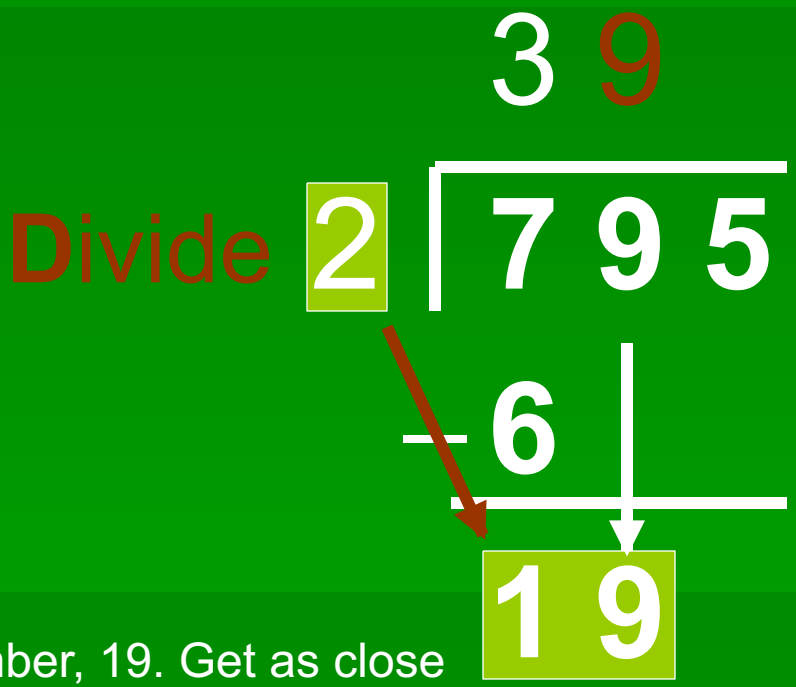
Since we have more to divide we must repeat.

We have not done anything with the 5 yet, so we must keep going and repeat the 5 steps of long division.

Step 1. Divide19 2 ÷



Dad



Divide 2 into your new number, 19. Get as close as you can without going over.

Place your answer directly above the 9 in the quotient.

Step 2. Multiply 2 x 9 = 18

Mom

Multiply

$$
\begin{array}{r|l}
 & 3\ \boxed{9} \\
\hline
\boxed{2} & 7\ 9\ 5 \\
 & -6 \\
\hline
 & 1\ 9 \\
 & 1\ 8
\end{array}
$$

Multiply your divisor, 2, with your new umber in the quotient, 9.

Place your answer directly below the 19.

Step 3. Subtract 19 - 18 = 1

Sister

Subtract

$$\begin{array}{r} 3\,9 \\ 2\overline{)\,7\,9\,5} \\ -\,6\, \\ \hline 1\,9 \\ -\,1\,8 \\ \hline 1 \end{array}$$

Draw a line under the 18.

Draw a minus sign.

Subtract 18 from 19.

Write the answer under the line.

Step 4. Bring downBring down the 5

Brother

Bring down

$$\begin{array}{r} 39 \\ 2\overline{)795} \\ -6 \\ \hline 19 \\ -18 \\ \hline 15 \end{array}$$

Go to the next number in the dividend.

Draw an arrow under the 5.

Bring down the 5 and put it next to the 1.

Step 5. Repeat or Remainder Repeat

Rover

Repeat?
or
Remainder?

$$\begin{array}{r} 39 \\ 2\overline{)795} \\ -6\downarrow \\ \hline 19 \\ -18 \\ \hline 15 \end{array}$$

Since we have more to divide we must repeat.

The 2 can go into 15, so we must keep going.

Step 1. Divide 15 ÷ 2

Dad

Divide

$$
\begin{array}{r}
3\,9\,7 \\
2\overline{)\,7\,9\,5} \\
-\,6\downarrow \\
\hline
1\,9\downarrow \\
-\,1\,8 \\
\hline
1\,5
\end{array}
$$

Divide 2 into your new number, 15. Get as close as you can without going over.

Place your answer directly above the 5 in the quotient.

Step 2. Multiply 2 x 7= 14

Mom

Multiply

$$
\begin{array}{r}
3\ 9\ 7 \\
2\overline{)\,7\ 9\ 5} \\
-\,6\ \downarrow\ \ \downarrow \\
\hline
1\ 9\ \ \downarrow \\
-\,1\ 8\ \ \downarrow \\
\hline
1\ 5 \\
1\ 4
\end{array}
$$

Multiply your divisor, 2, with your new umber in the quotient, 7.

Place your answer directly below the 15.

Step 3. Subtract 15 – 14 = 1

Sister

Subtract

$$
\begin{array}{r}
3\ 9\ 7 \\
2\overline{)\ 7\ 9\ 5} \\
-\ 6\ \downarrow\ \ \\
\hline
1\ 9\ \ \\
-1\ 8\ \downarrow \\
\hline
1\ 5 \\
-\ 1\ 4 \\
\hline
1
\end{array}
$$

Draw a line under the 14.

Draw a minus sign.

Subtract 14 from 15.

Write the answer under the line.

Step 4. Bring down There are no more to bring down

Brother

Bring down

$$
\begin{array}{r}
3\,9\,7 \\
2\overline{)\,7\,9\,5} \\
-\,6\downarrow \\
\hline
1\,9 \\
-\,1\,8 \\
\hline
\,1\,5 \\
-\,1\,4 \\
\hline
\,1
\end{array}
$$

Look at your dividend to see if there are any more numbers to bring down.

If there are no more numbers to bring down then move on to step 5.

Step 5. Repeat or Remainder

There are no more numbers to bring down

Rover

~~Repeat?~~

~~or~~

Remainder?

$$
\begin{array}{r}
397\ R\ 1 \\
2\overline{)795} \\
-6\downarrow \\
\hline
19 \\
-18 \\
\hline
15 \\
-14 \\
\hline
1
\end{array}
$$

Since there are no more numbers to bring down and 2 will not divide into 1, you do not repeat.

The number left over, 1, becomes the remainder. Just copy it to the end of the quotient with an R in front of it.

You are done.

Super job!!

$$
\begin{array}{r}
3\,9\,7\ R\,1 \\
2\overline{)\,7\,9\,5} \\
-\,6\downarrow \\
\hline
1\,9 \\
-\,1\,8 \\
\hline
1\,5 \\
-\,1\,4 \\
\hline
1
\end{array}
$$

Ruff Ruff