### Partial Quotients Division

(Aka – Big 7)

1st Way for Partial Quotients

## Dividing by multiples of 10

#### Partial Quotients Division

8 | 177

Start by setting up the problem like this – it looks like the algorithm, but the right side has a long line drawn down.

(Just like in the Hangman Game.)

# Ask - How many 8's are in 177?

There are at least 10, so that will be the <u>first</u> partial quotient..

10<sup>4</sup>

8 | 177

Use multiples of 10.

Write on the side if you need it.

$$8 \times 1 = 8$$

$$8 \times 10 = 80$$

$$8 \times 100 = 800$$

Multiply 10 \* 8

Write the product under the dividend in the problem.

Then subtract!

Subtract 177 minus 80.

Start the process over again.

Ask - how many 8's are in 97?

Again, there are at least 10.

Put 10 on the right side and multiply.

 $8 \times 1 = 8$ 

 $8 \times 10 = 80$ 

 $8 \times 100 = 800$ 

Subtract 97 minus 80.

$$8 \times 1 = 8$$

$$8 \times 10 = 80$$

$$8 \times 100 = 800$$

 $8 \times 1 = 8$ 

 $8 \times 10 = 80$ 

 $8 \times 100 = 800$ 

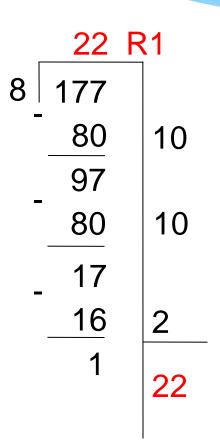
Start the process again.

10 Ask - how many 8's are in 17.

There are at least 2. Subtract.

2

$$8 \times 1 = 8$$
 $8 \times 10 = 80$ 
 $8 \times 100 = 800$ 



Since the 1 is less than 8, you are finished dividing.

Now add up the partial quotients.

Remainder 1

2<sup>nd</sup> Way Partial Quotients
This method combines Long Division with Partial Quotients

# Dividing by multiples of 10 and other factors

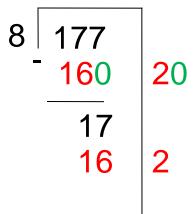
Now, let's try to same problem using basic multiplication facts!

8 | <u>177</u> <u>160</u> Ask - How many 8's are in 17?

We know that  $8 \times 2 = 16$ 

Using multiples of 10, we can do:

 $8 \times 20 = 160$ 



Ask - how many 8's are in 17?

Again, there are at least 2.

$$8 \times 1 = 8$$
  
 $8 \times 10 = 80$ 

$$8 \times 100 = 800$$

16

$$8 \times 1 = 8$$

$$8 \times 10 = 80$$

$$8 \times 100 = 800$$

Subtract 17 minus 16.

1 is less than your divisor, 8, so you are finished dividing.

Now, add up the partial quotients, 20 and 2 and write their sum with the remainder at the top of the problem.

$$8 \times 1 = 8$$

$$8 \times 10 = 80$$

$$8 \times 100 = 800$$