Name _____

Partial Quotients

Florida's B.E.S.T.

- **Number Sense & Operations** 5.NSO.2.2
- **Mathematical Thinking & Reasoning** MTR.2.1, MTR.3.1, MTR.4.1, MTR.6.1, MTR.7.1

I Can use partial quotients to divide multi-digit whole numbers by 2-digit divisors.

UNLOCK the Problem

People in the United States eat about 23 pounds of pizza per person every year. If you ate that much pizza each year, how many years would it take you to eat 775 pounds of pizza?

- Rewrite in one sentence the problem you are asked to solve.

_____

_____

Divide by using partial quotients.

775 ÷ 23

STEP 1

Subtract multiples of the divisor from the dividend until the remaining number is less than the multiple. The easiest partial quotients to use are multiples of 10.

COMPLETE THE DIVISION PROBLEM.

$$\begin{array}{r} 23\overline{)775} \\ -\ \square \\ \hline 545 \end{array}$$

10×23 | 10

STEP 2

Subtract smaller multiples of the divisor until the remaining number is less than the divisor. Then add the partial quotients to find the quotient.

775 ÷ 23 is _____ r _____.

Write the quotient 775 ÷ 23 as a fraction. _____

So, it would take you more than 33 years to eat 775 pounds of pizza.

Remember

Depending on the question, a remainder may or may not be used in answering the question. Sometimes the quotient is adjusted based on the remainder.

Example

Myles is helping his father with the supply order for his pizza shop. For next week, the shop will need 1,450 ounces of mozzarella cheese. Each package of cheese weighs 32 ounces. Complete Myles's work to find how many packages of mozzarella cheese he needs to order.

$32\overline{)1{,}450}$

$-\ 320$	_____ × 32	
$1{,}130$		
$-\ 320$	_____ × 32	
810		
-320	_____ × 32	
490		
-320	_____ × 32	
170		
-160	_____ × 32	+ _____
10		

1,450 ÷ 32 is _____ r _____.

So, he needs to order _____ packages of mozzarella cheese.

Math Talk

MTR 6.1 Assess the reasonableness of solutions.

What does the remainder represent? Explain how a remainder will affect your answer.

Try This! Use different partial quotients to solve the problem above. Write the remainder as a fraction.

$32\overline{)1{,}450}$

Math Idea

Using different multiples of the divisor to find partial quotients provides many ways to solve a division problem. Some ways are quicker, but all result in the same answer.