

G5-M2-Lesson 8

1. Estimate the products first. Solve by using the standard algorithm. Use your estimate to check the reasonableness of the product.

a. 795×248

$\approx 800 \times 200$

$= 160,000$

I could have rounded 248 to 250 in order to have an estimate that is closer to the actual product. Another reasonable estimate is $800 \times 250 = 200,000$.

$$\begin{array}{r} 795 \\ \times 248 \\ \hline 6360 \end{array}$$

$8 \times 5 = 40$, which I record as 4 tens 0 ones. 8×9 tens = 72 tens plus 4 tens, makes 76 tens. I record 76 tens as 7 hundreds 6 tens.

$$\begin{array}{r} 31800 \\ + 159000 \\ \hline 197160 \end{array}$$

This product is reasonable because 197,160 is close to 160,000. My other estimate is also reasonable because 197,000 is very close to 200,000.

b. $4,308 \times 505$

$\approx 4,000 \times 500$

$= 2,000,000$

I have to be careful to estimate accurately. 4 thousands \times 5 hundreds is 20 hundred thousands. That's the same as 2 million. If I just count zeros I might get a wrong estimate.

$$\begin{array}{r} 4308 \\ \times 505 \\ \hline 21540 \end{array}$$

This partial product is the result of $5 \times 4,308$.

$$\begin{array}{r} 2154000 \\ + 21540 \\ \hline 2,175,540 \end{array}$$

This partial product is the result of $500 \times 4,308$. It makes sense that it is 100 times greater than the first partial product.

2. When multiplying 809 times 528, Isaac got a product of 42,715. Without calculating, does his product seem reasonable? Explain your thinking.

Isaac's product of about 40 thousands is not reasonable. A correct estimate is 8 hundreds times 5 hundreds, which is 40 ten thousands. That's the same as 400,000 not 40,000.

I think Isaac rounded 809 to 800 and 528 to 500. Then, I think he multiplied 8 times 5 to get 40. From there, I think he miscounted the zeros.