



MATH WITH MR DJ

GRADE 5 · NUMBER & OPERATIONS IN BASE TEN

DIVIDING BY TWO-DIGIT DIVISORS

Today's goal: I can find whole-number quotients with up to four-digit dividends and two-digit divisors.



Tan



Digit



Blaze



Pi



Estimate first

1 $4872 \div 24$. About $5000 \div 25$.

TURN & TALK

About 200. So the answer has three digits.



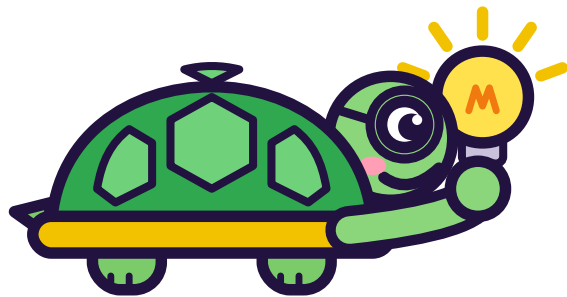
Now the steps

1 24 into 48: twice. $48 - 48 = 0$.

2 Bring down the 7. 24 into 7?

REMEMBER

None. And “none” is a digit: 0.



BIG IDEA 2

Finish it

1 Bring down the 2, making 72.

2 24 into 72: three times.

REMEMBER

2, then 0, then 3. 203.



BIG IDEA 3

Leave the zero out

1 You get 23.

REMEMBER

Estimate said 200. Not a slip – wrong size.



BIG IDEA 4

Multiply back

1 $24 \times 203 = 4872$. Correct.

2 $24 \times 23 = 552$.

REMEMBER

The check prices the mistake, not just finds it.



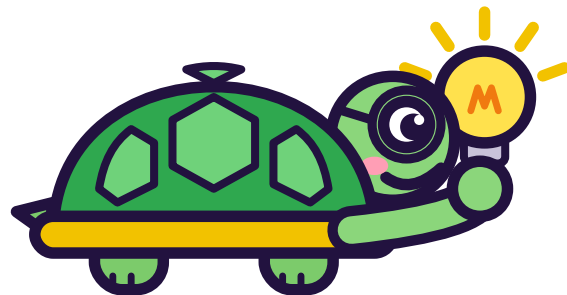
Remainders

1 $1000 \div 32 = 31 \text{ r } 8$. Check: $32 \times 31 + 8 = 1000$.

2 If the remainder reaches 32, another group fits.

REMEMBER

20 r 20 is NOT 20.20. It is 20 and 20/24.



Digit found a slip...

THE PROBLEM

Estimate, then work out $7225 \div 25$, then check.

WHAT A STUDENT DID

Answered 28 r 225 — the last step abandoned because 225 “looked like a remainder”. 225 is more than 25, so the division was not finished.

YOUR MISSION

What went wrong? What's the right answer?



Estimate, then work out $7225 \div 25$, then check.

- 1 Estimate: $7000 \div 25 = 280$, so just under 300.
- 2 25 into 72 goes 2 times (50), leaving 22.
- 3 Bring down the 2, making 222. 25 into 222 goes 8 times (200), leaving 22.
- 4 Bring down the 5, making 225. 25 into 225 goes 9 times exactly.
- 5 289. Check: $25 \times 289 = 7225$.

Answer:

estimate about 290 ($7250 / 25$); answer 289; check $25 \times 289 = 7225$



Pick your pepper!



◀ MILD

Estimate, then work out
 $966 \div 42$, then check.

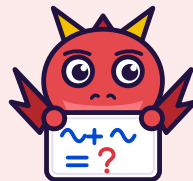
#1 on your practice sheet



◀◀ MEDIUM

482 seats are needed and each row holds 24. How many full rows, and how many seats left over? What does the remainder mean here?

#4 on your practice sheet

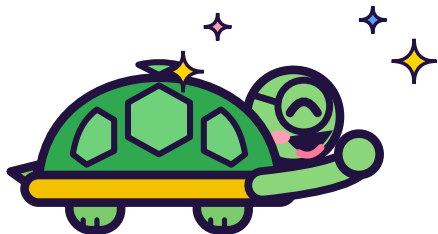


◀◀◀ SPICY

A child gets $2050 \div 41 = 5$. Use an estimate only to show this is wrong, and say roughly how wrong.

#6 on your practice sheet

How's it going?



3 • Got it!

I could teach it



2 • Almost

One more example, please



1 • Not yet

I need some help



MATH WITH MR DJ

NOW YOU!

Practice sheet: everyone does Mild & Medium, then climb the peppers.

Stuck? Look back at Mr DJ's example at the top of the sheet.

Need it again? Watch “Long Division (No Remainders): Step by Step Guide” on YouTube @MathWithMrDJ

Brain break: 3 new daily puzzles at puzzles.mathwithmrdj.com

