

CSV Data Analysis Instructions

https://gemini.google.com/app/2d08804eb67496a0

User prompt: Please use the attached instructions .txt file to analyze the .csv file will be loaded in the next step. The instructions file has an initial set of instructions followed by a series of questions where each question is denoted QNN where NN will be 01, 02, ... After processing the .csv data file response to the overview Q01.

Response: Understood! I am ready to process and analyze your .csv data file based on these instructions and column definitions.

Please upload or paste the .csv data file when you are ready, and I will perform the initial setup and respond to **Q01: Create an overview of the .csv data file.**

User prompt: Here is the .csv data file to analyze

Response: Q01: Overview of the .csv Data File

Data Summary

The dataset contains **616 records** (rows) and **12 attributes** (columns) tracking math problem-solving sessions for a single user.

- **User Name (idname):** amy
- **User ID (iduser):** 334392307
- **Date Range (Date):** February 22, 2026 – June 12, 2026
- **Session Days Range (days):** Day 31 to Day 141

Column Definitions & Data Completeness

Column Name	Data Type	Non-Null Count	Description / Notes
idname	Text	616 / 616	User name (amy)
iduser	Numeric (Int)	616 / 616	Unique user ID (334392307)
days	Numeric (Int)	616 / 616	Days elapsed since starting RMM for session
idlevel	Text	616 / 616	Problem type and digit count (10 distinct categories)
timestamp	Numeric (Int)	616 / 616	Epoch timestamp marking session start

Column Name	Data Type	Non-Null Count	Description / Notes
problemNum	Numeric (Int)	616 / 616	Sequential problem number within session
Date	Text / Date	616 / 616	Session start date and time
time	Numeric (Float)	616 / 616	Time spent to answer problem (seconds)
tries	Numeric (Float)	282 / 616	Number of attempts (1–4) for single-digit problems
equation	Text	616 / 616	Delimited string representing the math equation
ordered	Text / Bool	51 / 616	True for ordered single-digit multiplication (m11)
chunked	Text	102 / 616	b (basic) or c (chunked) presentation mode for m2 problems

Problem Level Breakdown (idlevel)

Level	Category Description	Count	Percentage
m2	2-digit multiplication	102	16.56%
s1	1-digit subtraction	92	14.94%
a1	1-digit addition	86	13.96%
a3	3-digit addition	65	10.55%
s3	3-digit subtraction	54	8.77%
m11	1-digit multiplication (type 1)	53	8.60%
m12	1-digit multiplication (type 2)	51	8.28%
a2	2-digit addition	50	8.12%
s2	2-digit subtraction	50	8.12%
d3	3-digit division	13	2.11%
Total		616	100.0%

Key Summary Statistics

- **Completion Time (time):**
 - **Mean:** 6.60 seconds
 - **Median:** 3.37 seconds
 - **Min / Max:** 0.45 seconds / 144.53 seconds
 - **Tries (tries):**
 - **Mean Attempts:** 1.32 tries
 - **Range:** 1 to 4 tries
 - **Chunking (chunked):**
 - **Basic Mode (b):** 75 problems
 - **Chunked Mode (c):** 27 problems
 - **Ordering (ordered):**
 - **Ordered Presentation (True):** 51 problems
-

User prompt: Please perform Q01

Response: Q01: Overview of the .csv Data File

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Problem Level Breakdown (idlevel)

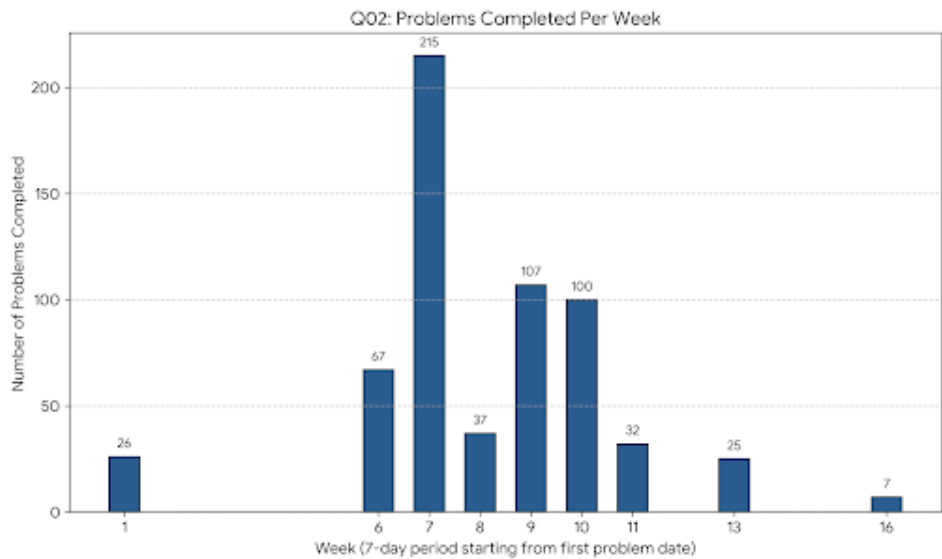
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-

User prompt: Perform Q02



Q02: Problems Completed Per Week

Below is the column chart showing the total number of problems completed per weekly period, defined as each 7-day window starting from the earliest recorded problem date (**February 22, 2026**).

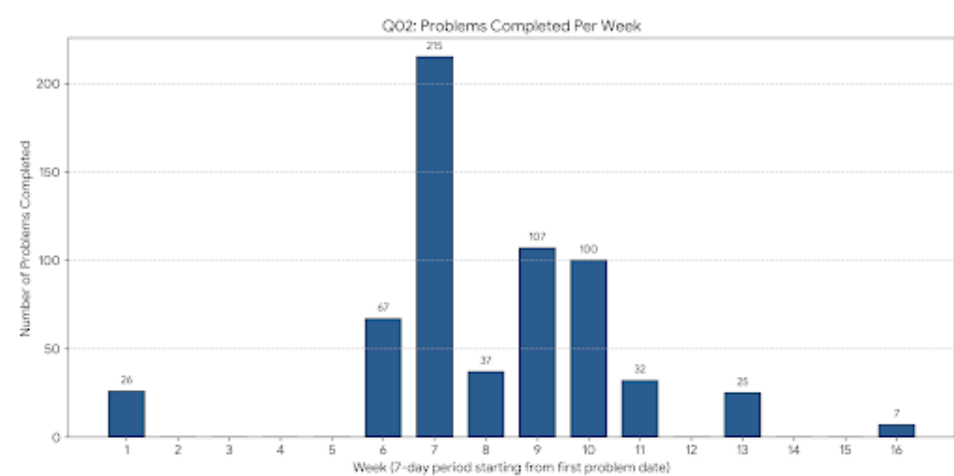
Visualization

Data Breakdown

Week #	Date Range (7-Day Period)	Total Problems Completed
Week 1	Feb 22, 2026 – Feb 28, 2026	26
Week 2	Mar 01, 2026 – Mar 07, 2026	0
Week 3	Mar 08, 2026 – Mar 14, 2026	0
Week 4	Mar 15, 2026 – Mar 21, 2026	0
Week 5	Mar 22, 2026 – Mar 28, 2026	0
Week 6	Mar 29, 2026 – Apr 04, 2026	67
Week 7	Apr 05, 2026 – Apr 11, 2026	215 (<i>Peak activity</i>)
Week 8	Apr 12, 2026 – Apr 18, 2026	37
Week 9	Apr 19, 2026 – Apr 25, 2026	107
Week 10	Apr 26, 2026 – May 02, 2026	100

Week #	Date Range (7-Day Period)	Total Problems Completed
Week 11	May 03, 2026 – May 09, 2026	32
Week 12	May 10, 2026 – May 16, 2026	0
Week 13	May 17, 2026 – May 23, 2026	25
Week 14	May 24, 2026 – May 30, 2026	0
Week 15	May 31, 2026 – Jun 06, 2026	0
Week 16	Jun 07, 2026 – Jun 13, 2026	7
Total		616

User prompt: Perform Q02



Q02: Problems Completed Per Week

Here is the column chart showing the number of problems completed per week, where each week is defined as a seven-day period starting on the date of the earliest recorded problem (**February 22, 2026**).

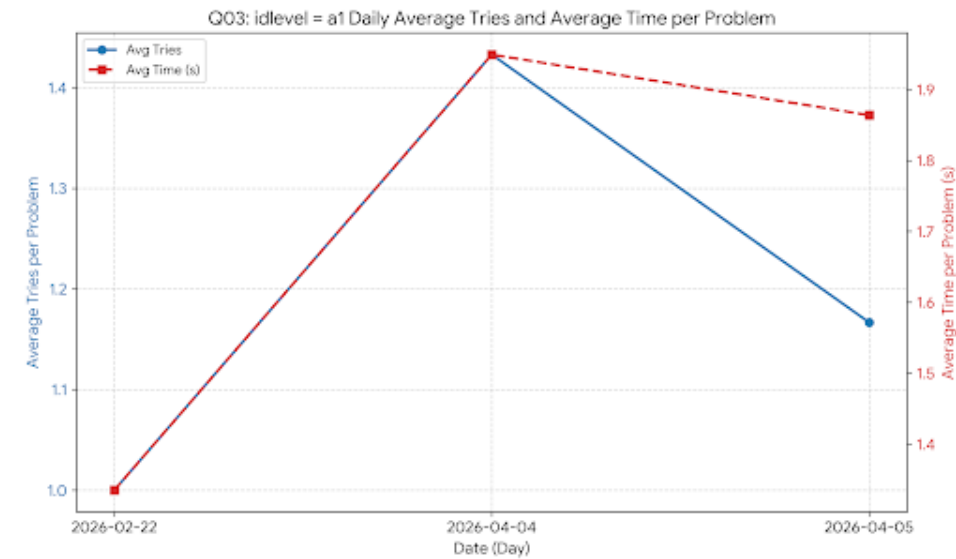
Visualization

Weekly Summary Table

Week Number	Date Range (7-Day Period)	Problems Completed
Week 1	Feb 22, 2026 – Feb 28, 2026	26

Week Number	Date Range (7-Day Period)	Problems Completed
Week 2	Mar 01, 2026 – Mar 07, 2026	0
Week 3	Mar 08, 2026 – Mar 14, 2026	0
Week 4	Mar 15, 2026 – Mar 21, 2026	0
Week 5	Mar 22, 2026 – Mar 28, 2026	0
Week 6	Mar 29, 2026 – Apr 04, 2026	67
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Week 13	May 17, 2026 – May 23, 2026	25
Week 14	May 24, 2026 – May 30, 2026	0
Week 15	May 31, 2026 – Jun 06, 2026	0
Week 16	Jun 07, 2026 – Jun 13, 2026	7
Total		616

User prompt: Perform Q03



Q03: Daily Average Tries and Average Time for idlevel = a1

For idlevel = a1 (1-digit addition), problems were completed across three specific dates: 2026-02-22, 2026-04-04, and 2026-04-05.

Below is the dual-axis line chart plotting:

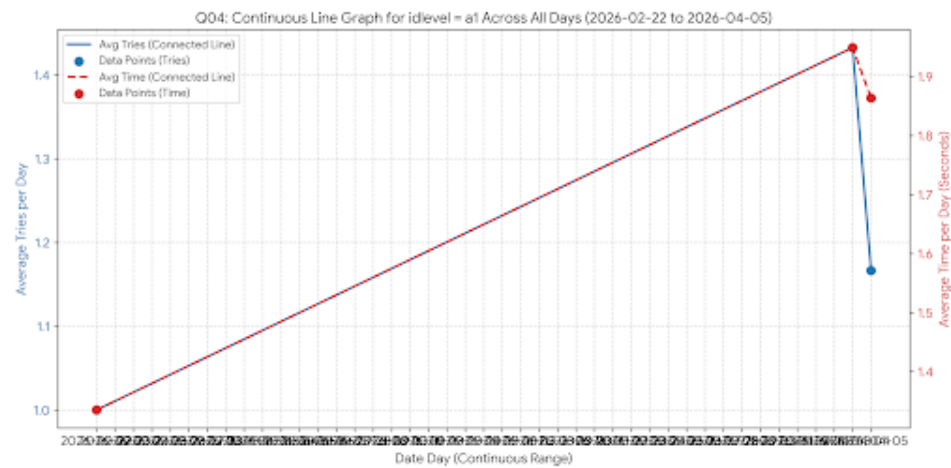
- **Left Y-Axis (Blue):** Average number of tries per problem per day.
- **Right Y-Axis (Red):** Average time spent per problem (in seconds) per day.

Visualization

Daily Metrics Table (idlevel = a1)

Date	Total Problems	Average Tries (Left Axis)	Average Time (Seconds) (Right Axis)
2026-02-22	1	1.000	1.335 s
2026-04-04	67	1.433	1.949 s
2026-04-05	18	1.167	1.864 s
Overall Total / Mean	86	1.372	1.924 s

User prompt: Perform Q04



Q04: Continuous Line Graph for idlevel = a1 Across All Calendar Days

To ensure all calendar days (from the first a1 problem on **2026-02-22** through **2026-04-05**) are included and connected as a line graph:

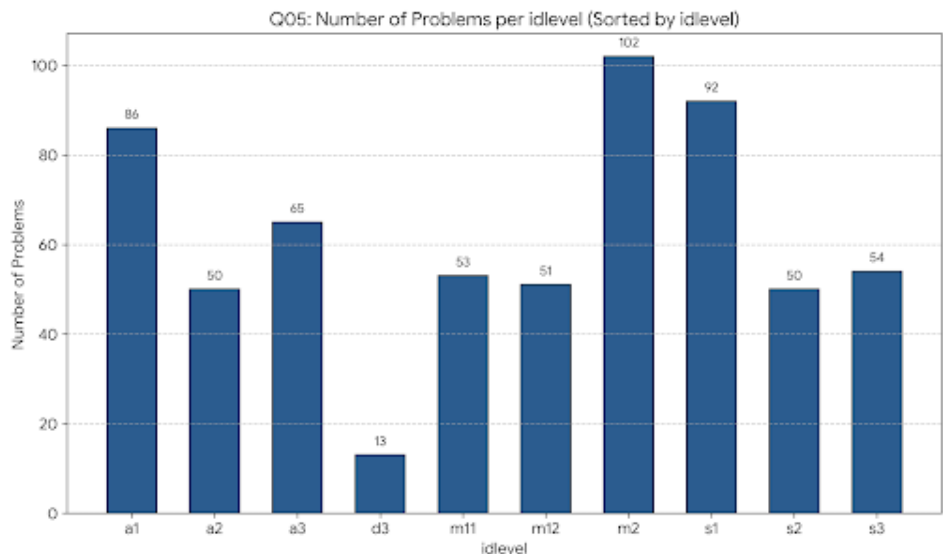
- All 43 continuous calendar days are plotted on the x-axis.
- Linear interpolation connects the active data points to form uninterrupted trends across days without recorded activity.

Visualization

Data Overview Table

Date Range / Key Dates	Days Span	Avg Tries Status	Avg Time Status	Notes
2026-02-22	Day 1	1.000	1.335 s	Actual session data recorded
2026-02-23 to 2026-04-03	Days 2–41	Interpolated	Interpolated	Gap without a1 activity (connected by continuous line)
2026-04-04	Day 42	1.433	1.949 s	Actual session data recorded
2026-04-05	Day 43	1.167	1.864 s	Actual session data recorded

User prompt: Perform Q05



Q05: Number of Problems per idlevel

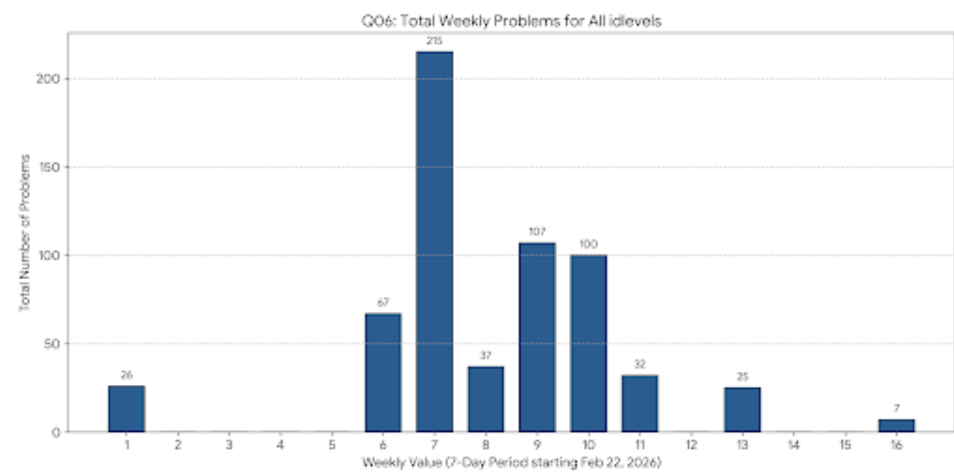
Here is the column bar chart showing the total number of problems completed for each idlevel, sorted alphabetically by idlevel.

Visualization

Data Table (Sorted by idlevel)

idlevel	Problem Description	Total Problems
a1	1-Digit Addition	86
a2	2-Digit Addition	50
a3	3-Digit Addition	65
d3	3-Digit Division	13
m11	1-Digit Multiplication (Type 1)	53
m12	1-Digit Multiplication (Type 2)	51
m2	2-Digit Multiplication	102
s1	1-Digit Subtraction	92
s2	2-Digit Subtraction	50
s3	3-Digit Subtraction	54
Total		616

User prompt: Perform Q06



Q06: Total Number of Weekly Problems for All idlevels

Here is the column chart showing the total number of weekly problems across all `idlevel` categories combined. Each weekly period represents a seven-day window starting on the earliest problem date (**February 22, 2026**).

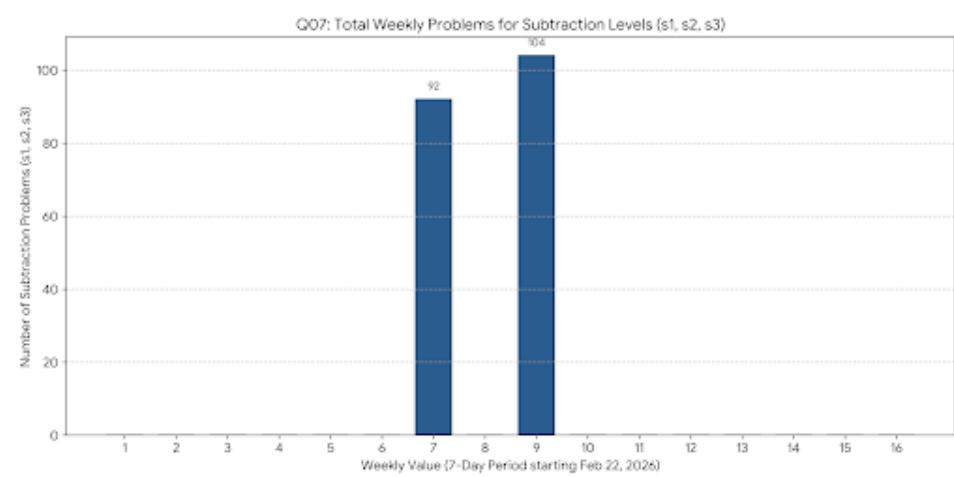
Visualization

Weekly Summary Table

Weekly Value	Date Span (7-Day Period)	Total Number of Problems
Week 1	Feb 22, 2026 – Feb 28, 2026	26
Week 2	Mar 01, 2026 – Mar 07, 2026	0
Week 3	Mar 08, 2026 – Mar 14, 2026	0
Week 4	Mar 15, 2026 – Mar 21, 2026	0
Week 5	Mar 22, 2026 – Mar 28, 2026	0
Week 6	Mar 29, 2026 – Apr 04, 2026	67
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Week 13	May 17, 2026 – May 23, 2026	25
Week 14	May 24, 2026 – May 30, 2026	0
Week 15	May 31, 2026 – Jun 06, 2026	0
Week 16	Jun 07, 2026 – Jun 13, 2026	7
Total		616

User prompt: Perform Q07



Q07: Total Weekly Problems for Subtraction Levels (s1, s2, and s3)

Here is the column chart showing the total number of weekly problems specifically for subtraction idlevels (s1, s2, and s3).

All subtraction problems occurred within two specific weeks: **Week 7** and **Week 9**.

Visualization

Weekly Subtraction Breakdown Table

Weekly Value	Date Span (7-Day Period)	s1 Problems	s2 Problems	s3 Problems	Total Subtraction Problems
Weeks 1–6	Feb 22, 2026 – Apr 04, 2026	0	0	0	0
Week 7	Apr 05, 2026 – Apr 11, 2026	92	0	0	92
Week 8	Apr 12, 2026 – Apr 18, 2026	0	0	0	0
Week 9	Apr 19, 2026 – Apr 25, 2026	0	50	54	104
Weeks 10–16	Apr 26, 2026 – Jun 13, 2026	0	0	0	0
Total		92	50	54	196

User prompt: Perform Q08

Response: Q08: Average Times for a2 Problems (With vs. Without Carries)

For `idlevel = a2` (2-digit addition) problems, each equation follows the format `number1|number2|number3|+` where `number1 + number2 = number3`.

A problem requires a carry from the ones to the tens column if the sum of the ones digits is 10 or greater (e.g., $49 + 48 \rightarrow 9 + 8 = 17 \geq 10$).

Results Summary

Carry Requirement	Number of Problems	Average Time (Seconds)	Median Time (Seconds)	Standard Deviation
No Carry Required	32	3.506 s	3.107 s	1.187 s
Carry Required	18	4.503 s	3.805 s	2.058 s
Total / Overall	50	3.865 s	3.304 s	1.621 s

Key Findings

- **Time Difference:** On average, problems requiring a carry took **0.997 seconds longer** (~28.4% slower) to complete than problems without carries.
- **Distribution:** 32 out of the 50 total a2 problems (64%) did not require a carry, while 18 problems (36%) required a carry from the ones to the tens column.

User prompt: Perform Q09

Response: Q09: Average Time for m1 Problems by Type (3rd Character of idlevel)

For single-digit multiplication problems (idlevel starting with m1), the 3rd character represents the fixed number (type) appearing in every problem for that level:

- **Type 1 (idlevel = m11):** Problems where 1 is a factor (e.g., 1×0 , 1×1 , 1×4).
- **Type 2 (idlevel = m12):** Problems where 2 is a factor (e.g., 2×7 , 2×1 , 2×9).

Summary Table

idlevel	Type Number	Total Problems	Average Time (Seconds)	Median Time (Seconds)	Min Time	Max Time	Standard Deviation
m11	1	53	1.818 s	1.528 s	0.843 s	4.983 s	0.928 s
m12	2	51	1.969 s	1.506 s	0.741 s	7.671 s	1.418 s
Overall m1	—	104	1.892 s	1.528 s	0.741 s	7.671 s	1.196 s

Key Findings

- **Performance Comparison:** Problems involving the number **1** (m11) were solved slightly faster on average (**1.818s**) than problems involving the number **2** (m12, **1.969s**).
- **Consistency:** Both types showed very similar median completion times (~**1.51–1.53s**), though m12 had higher variance due to a few longer tail times (max 7.671s vs 4.983s).

User prompt: Perform Q10

Response: Q10: Average Time for idlevel = d3 Problems (Without Remainder vs. With Remainder)

For idlevel = d3 (3-digit division) problems, equations are formatted as dividend/divisor:

- **Without Remainder:** The dividend is evenly divisible by the divisor (e.g., $340/2 = 170$).
- **With Remainder:** The division produces a non-zero remainder (e.g., $819/30 = 27 \text{ R } 9$).

Results Summary

Remainder Category	Number of Problems	Average Time (Seconds)	Median Time (Seconds)	Min Time	Max Time	Standard Deviation
Without Remainder	8	18.576 s	8.173 s	5.158 s	91.409 s	29.480 s
With Remainder	5	23.034 s	19.024 s	7.988 s	37.440 s	12.784 s
Total / Overall d3	13	20.291 s	11.183 s	5.158 s	91.409 s	23.705 s

Complete d3 Problem Breakdown

Equation	Quotient & Remainder	Remainder Status	Completion Time (Seconds)
312/26	12 R 0	No Remainder	5.158 s
228/4	57 R 0	No Remainder	7.436 s
232/8	29 R 0	No Remainder	7.514 s
340/2	170 R 0	No Remainder	8.111 s
808/8	101 R 0	No Remainder	8.235 s
752/2	376 R 0	No Remainder	9.563 s
824/8	103 R 0	No Remainder	11.183 s
925/5	185 R 0	No Remainder	91.409 s (<i>Outlier</i>)
273/5	54 R 3	With Remainder	7.988 s

Equation	Quotient & Remainder	Remainder Status	Completion Time (Seconds)
819/30	27 R 9	With Remainder	15.536 s
994/35	28 R 14	With Remainder	19.024 s
928/64	14 R 32	With Remainder	35.180 s
735/42	17 R 21	With Remainder	37.440 s

Key Observations

- **Mean Comparison:** On average, division problems with remainders took **4.458 seconds longer (23.034s vs 18.576s)**.
 - **Median Impact:** Looking at the median (which filters out the 91.4-second outlier in the no-remainder set), problems with remainders took significantly longer (**19.024s median vs 8.173s median**), reflecting the extra step of calculating remaining quantities.
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