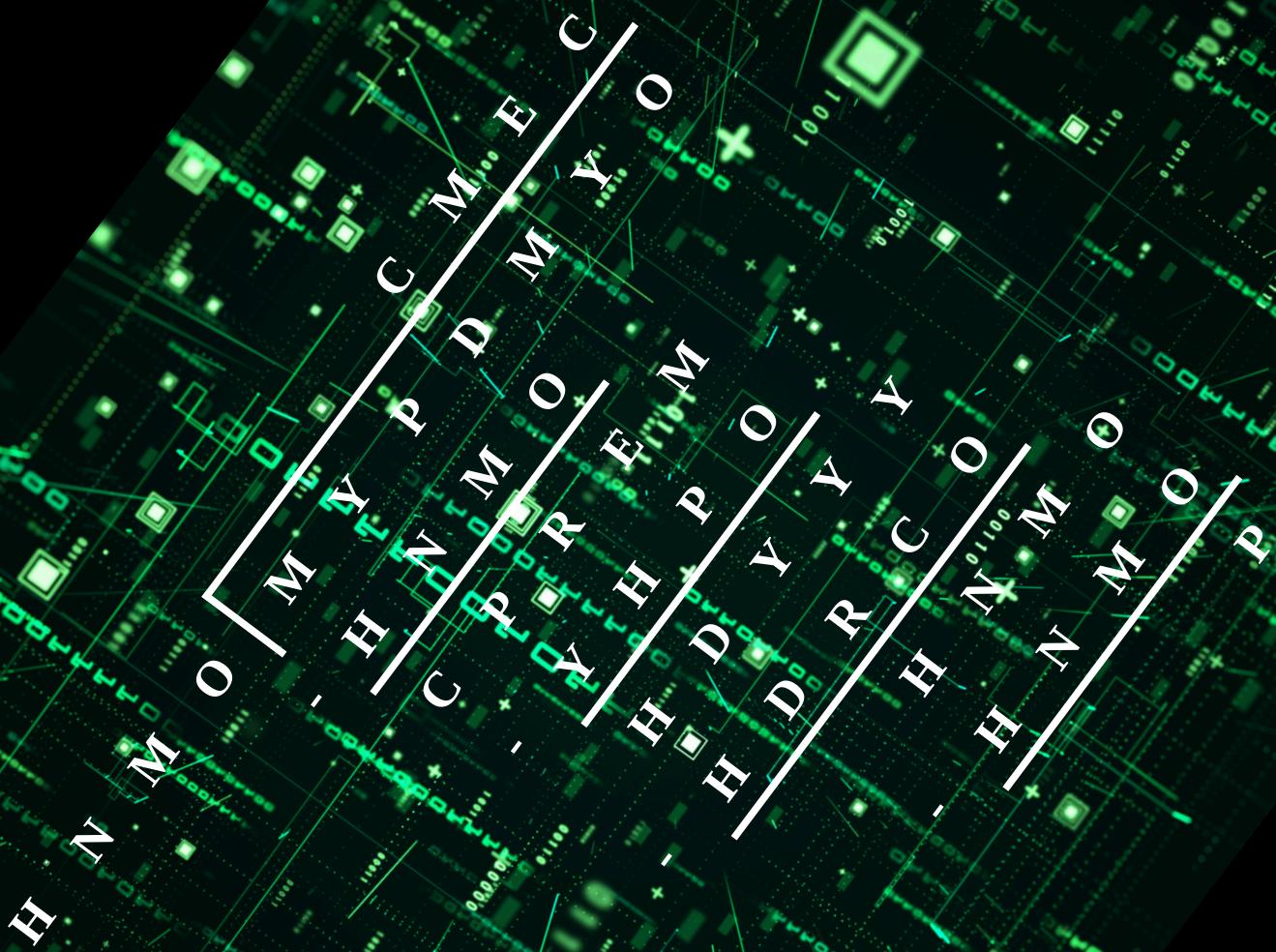


# Long Division Cryptarithmetic Logic Problems



Samples Edition

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# HOW TO SOLVE LONG DIVISION CRYPTARITHMS

Each puzzle hides the digits of a long division problem behind letters. Every letter stands for one unique digit from 0 to 9. Your job is to uncover those digits using division logic and the elimination grid.

## 1. Start with the First Division Step

Look at the left part of the dividend and the divisor. The first quotient letter must be large enough to make the division valid. Cross out any digits in the grid that would make the first step impossible.

## 2. Check Each Product and Remainder

Every subtraction step must follow real arithmetic: the divisor multiplied by the quotient letter must match the product row, the remainder must be smaller than the divisor, and borrowing must follow normal digit rules. Any violation lets you eliminate more digits.

## 3. Use the Divisor to Narrow Choices

The divisor gives strong clues. Its first letter cannot be zero, and any divisor-digit combination that cannot produce the product row eliminates that digit as a possibility.

## 4. Work Through the Quotient

Each new quotient letter must produce a correct product and remainder. If a digit causes incorrect alignment, impossible borrows, or a remainder too large, remove it from consideration.

## 5. Use the Elimination Grid

Cross out digits that violate any rule. When a letter is forced to a single digit, remove that digit from all other letters. Continue until every letter has exactly one digit left.

## 6. Reveal the Answer Key Phrase

When all letters are solved, substitute their digits back into the answer key band. Replace each digit with its matching letter to reveal the hidden phrase.

## 7. Double-Check Your Solution

A correct solution completes the entire long division cleanly, uses each digit only once, and produces a clear, meaningful phrase.



# **SAMPLES**



# Samples #1

Hint: Publisher of cryptarithmetic puzzles

books

Answer key: 28096354967 LL1

2 8 0 9 6 3 5 4 9 6 7

L L L 1

$$\begin{array}{r} & & C & M & E & C \\ H & N & M & 0 & \boxed{M & Y & P & D & M & Y & 0} \\ - & H & N & M & 0 \\ \hline C & P & R & E & M \\ - & Y & H & P & 0 \\ \hline H & D & Y & Y & Y \\ - & H & D & R & C & 0 \\ \hline H & N & M & 0 \\ - & H & N & M & 0 \\ \hline & & & & P \end{array}$$

	0	1	2	3	4	5	6	7	8	9
R										
H										
N										
O										
D										
C										
P										
Y										
M										
E										

# Samples #2

Hint: Hypothesized element 120

Answer key: 9246263690

9 2 4 6 2 6 3 6 9 0

$$\begin{array}{r} & & E & C & D & D \\ E & E & M & U & \boxed{E & D & B & A & A & U & L} \\ & - & E & E & M & U \\ & & \hline & I & L & U & A \\ & - & C & C & B & C \\ & & \hline & A & C & L & U \\ & - & D & D & I & L \\ & & \hline & D & D & I & L \\ & - & D & D & I & L \\ & & \hline & & & M \end{array}$$

	0	1	2	3	4	5	6	7	8	9
E										
U										
I										
N										
C										
L										
D										
A										
B										
M										

# Samples #3

Hint: Closest star to the Sun

Answer key: 03657M4 89N14237

0 3 6 5 7 M M 4      8 9 N 1 4 2 3 7

$$\begin{array}{r}
 & & X & C & A & E & T \\
 \begin{array}{r} 0 & X & U \end{array} & \boxed{R & C & T & R & 0 & T & R & U} \\
 - & R & U & O & P & & & \\
 \hline
 & X & X & R & 0 & & & \\
 - & X & U & T & 0 & & & \\
 \hline
 & R & U & P & T & & & \\
 - & U & O & P & C & & & \\
 \hline
 & X & E & R & R & & & \\
 - & X & C & O & C & & & \\
 \hline
 & 0 & X & U & & & & \\
 - & 0 & X & U & & & & \\
 \hline
 & & & & & & & P
 \end{array}$$

	0	1	2	3	4	5	6	7	8	9
E										
I										
C										
X										
P										
T										
0										
U										
R										
A										

# Samples #4

Hint: Icy Saturn moon with the potential for

life

Answer key: 620614385

6 2 0 6 1 4 3 8 5

					D	U	F				
U	L	A	B		D	L	E	F	L	U	D
				-	N	A	A	A	L		
						B	N	S	C	U	
				-	E	S	L	B	E		
						B	D	D	N	D	
				-	B	D	D	N	D		C

	0	1	2	3	4	5	6	7	8	9
C										
A										
S										
D										
N										
L										
B										
E										
U										
F										

# Samples #5

Hint: Type of logic problem

Answer key: 6892 D0503089

CR1P7AR074M3

6 8 9 2

D D 0 5 0 3 0 8 9

C R 1 P 7 A R 0 7 4 M 3

$$\begin{array}{r} & & & & & O & Y & L \\ N & V & I & T & \left[ \begin{array}{cccccc} T & T & V & T & T & Y & G \\ - & T & L & I & V & L \\ \hline Y & V & G & Y & Y \\ - & N & V & I & T \\ \hline V & T & I & H & G \\ - & V & T & I & H & G \\ \hline I \end{array} \right] \end{array}$$

	0	1	2	3	4	5	6	7	8	9
V										
0										
T										
G										
L										
H										
Y										
S										
I										
N										

# Samples #6

Hint: social currency

Answer key: 80760547 8492647

8 0 7 6 0 5 4 7      8 4 9 2 6 4 7

$$\begin{array}{r} & & & I & A & P \\ R & P & T & I & \boxed{D & A & C & A & R & B & C} \\ & & & - & D & D & P & I & A \\ & & & & \hline & I & P & I & D & B \\ & & & - & I & B & C & A & C \\ & & & & \hline & R & B & T & R & C \\ & & & - & R & B & T & R & C \\ & & & & \hline & & & & U \end{array}$$

	0	1	2	3	4	5	6	7	8	9
D										
P										
A										
L										
R										
B										
C										
I										
U										
T										

# Samples #7

Hint: Creator of Cryptarithms.org

Answer key: 0A2367 5489142

$\bar{0} \ A \ \bar{2} \ \bar{3} \ \bar{6} \ \bar{7} \quad \bar{5} \ \bar{4} \ \bar{8} \ \bar{9} \ \bar{1} \ \bar{4} \ \bar{2}$

$$\begin{array}{cccccccc}
 & & T & R & N & C & C & C \\
 O & D & N & \boxed{R} & O & C & O & D & R & E & L \\
 - & & \boxed{O} & D & N & & & & & & \\
 & & \hline & D & T & D & 0 & & & & \\
 - & D & L & N & 0 & & & & & & \\
 & & \hline & T & T & L & D & & & & \\
 - & M & E & O & & & & & & & \\
 & & \hline & N & D & P & R & & & & \\
 - & N & T & E & L & & & & & & \\
 & & \hline & N & D & R & E & & & & \\
 - & N & T & E & L & & & & & & \\
 & & \hline & N & T & E & L & & & & \\
 - & N & T & E & L & & & & & & \\
 & & \hline & N & T & E & L & & & & \\
 & & & & & & & & & & L
 \end{array}$$

# Samples #8

Hint: Icy Jupiter moon with the potential

for life

Answer key: 845029

8 4 5 0 2 9

$$\begin{array}{r} & & F & F & A \\ D & F & A & E & \boxed{R & P & A & R & D & U & P} \\ - & U & F & R & E & D & \\ \hline & R & B & F & O & U & \\ - & U & F & R & E & D & \\ \hline & D & C & C & E & P & \\ - & D & C & C & E & P & \\ \hline & & & & & 0 & \end{array}$$

	0	1	2	3	4	5	6	7	8	9
B										
R										
C										
U										
A										
E										
0										
F										
P										
D										

# Samples #9

Hint: An imprint of Hypermodern LLC

Answer key: 79263095381 69E44

7 9 2 6 3 0 9 5 3 8 1

6 9 E 4 4

$$\begin{array}{r} & & M & S & I & T \\ Y & P & P & P & \boxed{T & H & C & T & P & R & H} \\ - & Y & P & P & P \\ \hline & M & Y & A & C & P \\ - & M & A & P & P & S \\ \hline & M & S & M & Y & R \\ - & M & T & T & T & A \\ \hline & C & R & R & H \\ - & C & R & R & H \\ \hline & & & & & A \end{array}$$

	0	1	2	3	4	5	6	7	8	9
R										
H										
C										
P										
T										
Y										
A										
I										
S										
M										

# Samples #10

Hint: Inspiration for cryptarithms.org

Answer key: 805930 145283

8 0 5 9 3 0      1 4 5 2 8 3

$$\begin{array}{r} & & E & B & C \\ R & W & L & L & \boxed{R & D & E & W & L & B & L} \\ - & L & E & F & B & C \\ \hline & L & C & B & C & B \\ - & L & O & C & W & O \\ \hline & L & F & F & R & L \\ - & L & F & F & R & L \\ \hline & & & & & D \end{array}$$

	0	1	2	3	4	5	6	7	8	9
R										
O										
A										
F										
L										
W										
C										
E										
D										
B										

# **ANSWER KEY**

## **Answer Key**

**Samples #1: Hypermodern LLC**

**Samples #2: Unbinilium**

**Samples #3: Proxima Centauri**

**Samples #4: Enceladus**

**Samples #5: Long Division Cryptarithms**

**Samples #6: cultural capital**

**Samples #7: Lander Compton**

**Samples #8: Europa**

**Samples #9: Cryptarithm Press**

**Samples #10: Edward Fowler**