

# Long Division Cryptarithm Logic Problems

H N M O  
- -  
M Y P D M E C  
C P R E M  
- -  
H D Y Y Y  
- -  
H N M O  
- -  
H N M O P

Samples Edition

# **Long Division Cryptarithm Logic Problems**

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## **Samples Edition**

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# TABLE OF CONTENTS

## Sections

|   |    |
|---|----|
| How to Solve Long Division Cryptarithms | V  |
| Answer Key                              | 19 |

## Categories

|         |   |
|---------|---|
| Samples | 7 |
|---------|---|



# 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 cryptarithm opuzzle books  
Answer key: 28096354967 LL1

2 8 0 9 6 3 5 4 9 6 7      L L 1

H N M O

C M E C

M Y P D M Y O

- H N M O

C P R E M

- Y H P O

H D Y Y Y

- H D R C O

H N M O

- H N M O

P

|   | 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

```

      E   C   D   D
E   E   M   U | E   D   B   A   A   U   L
      -   E   E   M   U
          -----
              I   L   U   A
          -   C   C   B   C
              -----
                  A   C   L   U
          -   D   D   I   L
              -----
                  D   D   I   L
          -   D   D   I   L
              -----
                          M

```

[illegible]

# Samples #3

**Hint: Closest star to the Sun**

**Answer key: 03657M4 89N14237**

$\bar{0} \quad \bar{3} \quad \bar{6} \quad \bar{5} \quad \bar{7} \quad \begin{matrix} M \\ M \end{matrix} \quad \bar{4} \quad \quad \quad \bar{8} \quad \bar{9} \quad \begin{matrix} N \\ N \end{matrix} \quad \bar{1} \quad \bar{4} \quad \bar{2} \quad \bar{3} \quad \bar{7}$

```

      X   C   A   E   T
0   X   U | R   C   T   R   O   T   R   U
          - R   U   O   P
            -----
              X   X   R   O
            - X   U   T   O
              -----
                R   U   P   T
              - U   O   P   C
                -----
                  X   E   R   R
                - X   C   O   C
                  -----
                      O   X   U
                    - O   X   U
                      -----
                          P

```

[illegible]

# Samples #4

**Hint: Icy Saturn moon with the potential for life**

**Answer key: 620614385**

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

```

      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

```

[illegible]This image shows a full page of white paper with horizontal grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings on the page.

# Samples #5

Hint: Type of logic problem

Answer key: 6892 D0503089  
CR1P7AR074M3

6 8 9 2      D 0 5 0 3 0 8 9      C R 1 P 7 A R 0 7 4 M 3

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   | O |   |   |   | Y | L |   |
| N | V | I | T | T | T | V | T | T | Y | G |
|   |   |   |   | - | T | L | I | V | L |   |
|   |   |   |   |   |   |   |   | Y | V | G |
|   |   |   |   |   |   |   |   | Y | Y |   |
|   |   |   |   |   |   |   |   | - | N | V |
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   | V | T | I |
|   |   |   |   |   |   |   |   | H | G |   |
|   |   |   |   |   |   |   |   | - | V | T |
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   | I | H | G |
|   |   |   |   |   |   |   |   |   |   |   |

# Samples #6

**Hint: social currency**

**Answer key: 80760547 8492647**

8 0 7 6 0 5 4 7      8 4 9 2 6 4 7

```

      I  A  P
R  P  T  I  |  D  A  C  A  R  B  C
      -  D  D  P  I  A
          -----
              I  P  I  D  B
      -  I  B  C  A  C
          -----
              R  B  T  R  C
      -  R  B  T  R  C
          -----
                        U

```

[illegible][illegible]

# Samples #7

**Hint: Creator of Cryptarithms.org**

**Answer key: 0A2367 5489142**

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

```

      T   R   N   C   C   C
O   D   N | R   O   C   O   D   R   E   L
      - O   D   N
        D   T   D   O
      - D   L   N   O
          T   T   L   D
          - M   E   O
            N   D   P   R
          - N   T   E   L
              N   D   R   E
              - N   T   E   L
                  N   T   E   L
                  - N   T   E   L
                      L

```

[illegible]



# Samples #8

**Hint: Icy Jupiter moon with the potential for life**

**Answer key: 845029**

8 4 5 0 2 9

$$\begin{array}{r}
 \begin{array}{cccc} D & F & A & E \end{array} \left| \begin{array}{cccccc} & & & & F & F & A \\ R & P & A & R & D & U & P \\ - & U & F & R & E & D \\ \hline & R & B & F & O & U \\ - & U & F & R & E & D \\ \hline & & D & C & C & E & P \\ - & & D & C & C & E & P \\ \hline & & & & & & 0 \end{array} \right.
 \end{array}$$

[illegible][illegible]

# 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 <sup>E</sup><sub>E</sub> 4 4

[illegible][illegible][illegible]

# Samples #10

Hint: Inspiration for cryptarithms.org

**Answer key: 805930 145283**

8 0 5 9 3 0      1 4 5 2 8 3

[illegible][illegible][illegible]

## **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