The Cipher Syndicate Mystery

Grade 5 math · Multiplication, Rounding, Place value, Fractions of a number, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

A high-tech break-in at Intelligence Headquarters has locked down the central vault! A mystery hacker breached the security grid, leaving encrypted clues behind. Use your detective skills and mathematical logic to crack the case and identify the suspect.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the rogue codebreaker is _____

Possible suspects

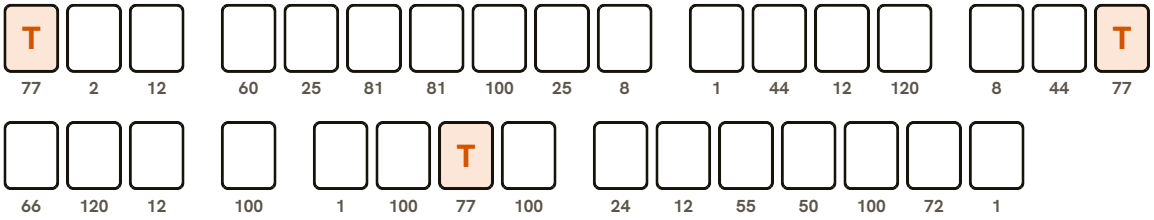
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY GADGET	SECONDARY TOOL	NOTE STYLE	WIG COLOR	SYSTEM VULNERABILITY
Agent Grid	Holographic Visor	Micro Spy Drone	Right Handed Script	Silver Metallic Wig	Static Field
Agent Cobalt	Pulse Scanner	EMP Blaster	Left Handed Script	Neon Blue Wig	Static Field
Agent Flare	Thermal Scanner	Data Keycard	Right Handed Script	Neon Blue Wig	Static Field
Agent Beacon	Signal Disruptor	EMP Blaster	Left Handed Script	Silver Metallic Wig	Static Field
Agent Echo	Pulse Scanner	EMP Blaster	Left Handed Script	Silver Metallic Wig	Static Field
Agent Sector	Signal Disruptor	Stealth Cloak	Left Handed Script	Silver Metallic Wig	Static Field
Agent Cipher Nine	Signal Disruptor	Laser Decoder	Left Handed Script	Silver Metallic Wig	Magnet Trap
Agent Sterling	Signal Disruptor	Stealth Cloak	Left Handed Script	Neon Blue Wig	Overload Beam
Agent Helix	Pulse Scanner	Stealth Cloak	Right Handed Script	Neon Blue Wig	Static Field
Agent Zenith	Sonic Jammer	Laser Decoder	Right Handed Script	Crimson Red Wig	Magnet Trap
Agent Prism	Holographic Visor	Stealth Cloak	Right Handed Script	Neon Blue Wig	Overload Beam
Agent Orbit	Thermal Scanner	Laser Decoder	Right Handed Script	Silver Metallic Wig	Static Field
Agent Vector	Signal Disruptor	Data Keycard	Left Handed Script	Silver Metallic Wig	Static Field
Agent Nova	Holographic Visor	Stealth Cloak	Left Handed Script	Silver Metallic Wig	Overload Beam
Agent Nexus	Signal Disruptor	Micro Spy Drone	Right Handed Script	Neon Blue Wig	Magnet Trap
Agent Quartz	Holographic Visor	Data Keycard	Right Handed Script	Crimson Red Wig	Magnet Trap
Agent Vance	Signal Disruptor	Data Keycard	Left Handed Script	Neon Blue Wig	Magnet Trap
Agent Pixel	Pulse Scanner	EMP Blaster	Right Handed Script	Neon Blue Wig	Static Field
Agent Matrix	Signal Disruptor	Data Keycard	Left Handed Script	Silver Metallic Wig	Overload Beam
Agent Static	Signal Disruptor	EMP Blaster	Left Handed Script	Silver Metallic Wig	Overload Beam
Agent Shadow	Pulse Scanner	Laser Decoder	Left Handed Script	Silver Metallic Wig	Static Field

CLUE 1 Multiplication facts (1-12)

To decrypt the first scrambled server log, you tally grid rows of encrypted code blocks.

Solve each problem, then write its letter in every clue box that shows the same number.



7 × 11 = ☐ → T

2 × 6 = ☐ → E

4 × 11 = ☐ → O

2 × 4 = ☐ → N

5 × 5 = ☐ → I

2 × 12 = ☐ → K

9 × 9 = ☐ → L

5 × 11 = ☐ → Y

10 × 12 = ☐ → S

8 × 9 = ☐ → R

6 × 10 = ☐ → V

2 × 1 = ☐ → H

10 × 5 = ☐ → C

10 × 10 = ☐ → A

1 × 1 = ☐ → D

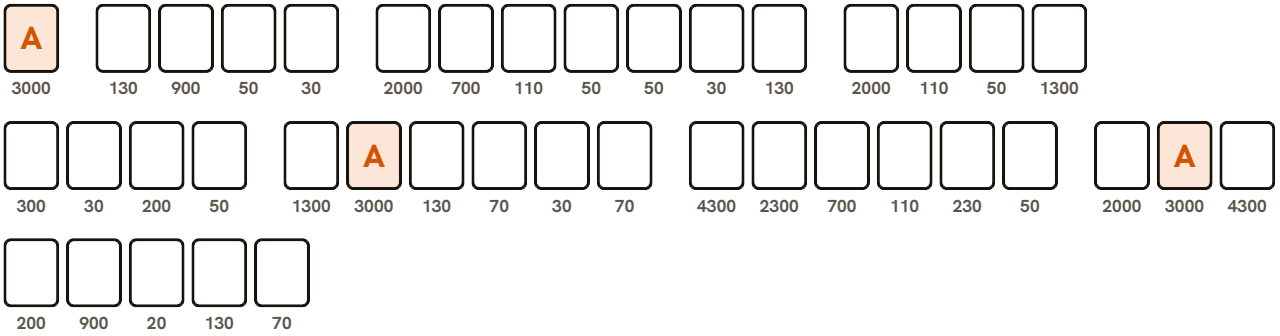
11 × 6 = ☐ → U

Scratch space:

CLUE 2 Rounding

The central radar scanner displays raw frequency numbers that must be rounded to estimate signal strength.

Solve each problem, then write its letter in every clue box that shows the same number.



Round 2,687 to the nearest thousand ☐ → A

Round 129 to the nearest ten ☐ → N

Round 49 to the nearest ten ☐ → T

Round 19 to the nearest ten ☐ → U

Round 173 to the nearest hundred ☐ → F

Round 109 to the nearest ten ☐ → I

Round 664 to the nearest hundred ☐ → R

Round 941 to the nearest hundred ☐ → O

Round 227 to the nearest ten ☐ → P

Round 27 to the nearest ten ☐ → E

Round 339 to the nearest hundred ☐ → L

Round 2,407 to the nearest thousand ☐ → W

Round 2,335 to the nearest hundred ☐ → C

Round 4,303 to the nearest hundred ☐ → S

Round 66 to the nearest ten ☐ → D

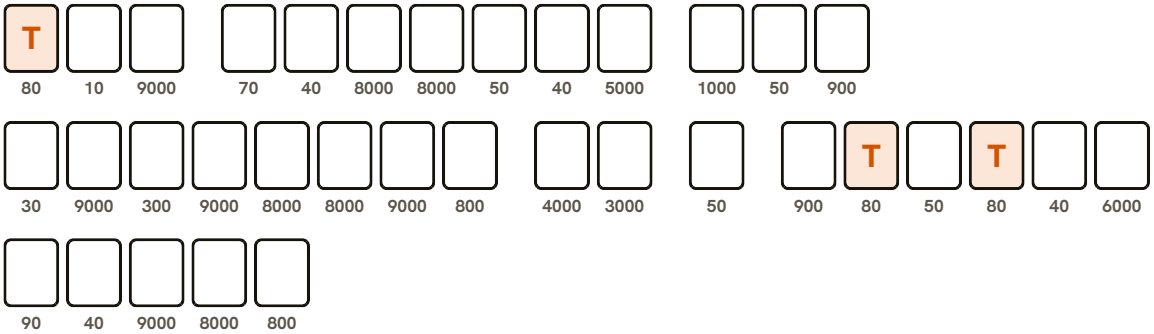
Round 1,344 to the nearest hundred ☐ → H

Scratch space:

CLUE 3 Place value

Analyzing the vault security pin requires inspecting specific digit values in the code sequence.

Solve each problem, then write its letter in every clue box that shows the same number.



What is the value of the 8 in 444,784? ☐ → T

What is the value of the 3 in 68,935? ☐ → R

What is the value of the 3 in 51,376? ☐ → P

What is the value of the 9 in 19,747? ☐ → E

What is the value of the 9 in 25,691? ☐ → F

What is the value of the 5 in 685,791? ☐ → N

What is the value of the 1 in 70,318? ☐ → H

What is the value of the 8 in 365,856? ☐ → D

What is the value of the 4 in 298,943? ☐ → I

What is the value of the 9 in 804,950? ☐ → S

What is the value of the 3 in 73,948? ☐ → Y

What is the value of the 1 in 71,247? ☐ → W

What is the value of the 5 in 80,953? ☐ → A

What is the value of the 7 in 929,370? ☐ → V

What is the value of the 4 in 14,525? ☐ → B

What is the value of the 8 in 98,994? ☐ → L

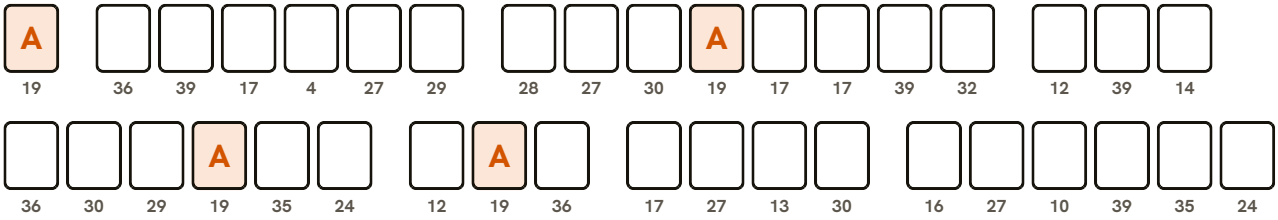
What is the value of the 6 in 86,372? ☐ → C

Scratch space:

CLUE 4 Fractions of a number

You calculate a fractional portion of rescued data drives to restore system memory.

Solve each problem, then write its letter in every clue box that shows the same number.



1/4 of 76 = ☐ → A

1/2 of 72 = ☐ → S

5/10 of 20 = ☐ → H

2/8 of 16 = ☐ → V

8/10 of 40 = ☐ → C

2/3 of 45 = ☐ → T

6/10 of 40 = ☐ → D

4/8 of 54 = ☐ → E

3/6 of 34 = ☐ → L

1/3 of 42 = ☐ → G

1/4 of 52 = ☐ → F

3/4 of 52 = ☐ → I

1/10 of 160 = ☐ → B

1/3 of 84 = ☐ → M

1/2 of 70 = ☐ → N

2/6 of 87 = ☐ → R

3/4 of 16 = ☐ → W

Scratch space:

CLUE 5 Division facts (1-12) - the last clue

> To balance network load across defense nodes, you divide remaining bandwidth equally.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

42 ÷ 7 = ☐	18 ÷ 9 = ☐	72 ÷ 6 = ☐	77 ÷ 7 = ☐	50 ÷ 10 = ☐
50 ÷ 5 = ☐	8 ÷ 8 = ☐	24 ÷ 8 = ☐	4 ÷ 1 = ☐	99 ÷ 11 = ☐
49 ÷ 7 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain activated a holographic visor, then disabled the cameras using an emp blaster.
2. The villain triggered a signal disruptor, then disabled the cameras using an emp blaster.
3. The villain scanned with thermal goggles, then bypassed security with a data keycard.
4. The villain scanned with thermal goggles, then scouted the hallway using a micro spy drone.
5. The villain scanned with thermal goggles, then unlocked the vault with a laser decoder.
6. The villain swept the room with a pulse scanner, then unlocked the vault with a laser decoder.
7. The villain triggered a signal disruptor, then scouted the hallway using a micro spy drone.
8. The villain swept the room with a pulse scanner, then disabled the cameras using an emp blaster.
9. The villain activated a holographic visor, then scouted the hallway using a micro spy drone.
10. The villain swept the room with a pulse scanner, then scouted the hallway using a micro spy drone.
11. The villain fired a sonic jammer, then disabled the cameras using an emp blaster.
12. The villain triggered a signal disruptor, then vanished into shadows with a stealth cloak.

TEACHER / PARENT

Answer Key

The Cipher Syndicate Mystery

Culprit: Agent Echo

Pulse Scanner · EMP Blaster · Left Handed Script · Silver Metallic Wig · Static Field

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE A DATA KEYCARD"

7 × 11 = 77 (T) · 2 × 6 = 12 (E) · 4 × 11 = 44 (O) · 2 × 4 = 8 (N) · 5 × 5 = 25 (I) · 2 × 12 = 24 (K) · 9 × 9 = 81 (L) · 5 × 11 = 55 (Y) · 10 × 12 = 120 (S) · 8 × 9 = 72 (R) · 6 × 10 = 60 (V) · 2 × 1 = 2 (H) · 10 × 5 = 50 (C) · 10 × 10 = 100 (A) · 1 × 1 = 1 (D) · 11 × 6 = 66 (U)

Clue 2 (Rounding): "A NOTE WRITTEN WITH LEFT HANDED SCRIPT WAS FOUND"

Round 2,687 to the nearest thousand = 3000 (A) · Round 129 to the nearest ten = 130 (N) · Round 49 to the nearest ten = 50 (T) · Round 19 to the nearest ten = 20 (U) · Round 173 to the nearest hundred = 200 (F) · Round 109 to the nearest ten = 110 (I) · Round 664 to the nearest hundred = 700 (R) · Round 941 to the nearest hundred = 900 (O) · Round 227 to the nearest ten = 230 (P) · Round 27 to the nearest ten = 30 (E) · Round 339 to the nearest hundred = 300 (L) · Round 2,407 to the nearest thousand = 2000 (W) · Round 2,335 to the nearest hundred = 2300 (C) · Round 4,303 to the nearest hundred = 4300 (S) · Round 66 to the nearest ten = 70 (D) · Round 1,344 to the nearest hundred = 1300 (H)

Clue 3 (Place value): "THE VILLAIN WAS REPELLED BY A STATIC FIELD"

What is the value of the 8 in 444,784? = 80 (T) · What is the value of the 3 in 68,935? = 30 (R) · What is the value of the 3 in 51,376? = 300 (P) · What is the value of the 9 in 19,747? = 9000 (E) · What is the value of the 9 in 25,691? = 90 (F) · What is the value of the 5 in 685,791? = 5000 (N) · What is the value of the 1 in 70,318? = 10 (H) · What is the value of the 8 in 365,856? = 800 (D) · What is the value of the 4 in 298,943? = 40 (I) · What is the value of the 9 in 804,950? = 900 (S) · What is the value of the 3 in 73,948? = 3000 (Y) · What is the value of the 1 in 71,247? = 1000 (W) · What is the value of the 5 in 80,953? = 50 (A) · What is the value of the 7 in 929,370? = 70 (V) · What is the value of the 4 in 14,525? = 4000 (B) · What is the value of the 8 in 98,994? = 8000 (L) · What is the value of the 6 in 86,372? = 6000 (C)

Clue 4 (Fractions of a number): "A SILVER METALLIC WIG STRAND WAS LEFT BEHIND"

1/4 of 76 = 19 (A) · 1/2 of 72 = 36 (S) · 5/10 of 20 = 10 (H) · 2/8 of 16 = 4 (V) · 8/10 of 40 = 32 (C) · 2/3 of 45 = 30 (T) · 6/10 of 40 = 24 (D) · 4/8 of 54 = 27 (E) · 3/6 of 34 = 17 (L) · 1/3 of 42 = 14 (G) · 1/4 of 52 = 13 (F) · 3/4 of 52 = 39 (I) · 1/10 of 160 = 16 (B) · 1/3 of 84 = 28 (M) · 1/2 of 70 = 35 (N) · 2/6 of 87 = 29 (R) · 3/4 of 16 = 12 (W)

Clue 5 (Division facts (1-12)): surviving statement is box 8 → Agent Echo

42 ÷ 7 = 6 · 18 ÷ 9 = 2 · 72 ÷ 6 = 12 · 77 ÷ 7 = 11 · 50 ÷ 10 = 5 · 50 ÷ 5 = 10 · 8 ÷ 8 = 1 · 24 ÷ 8 = 3 · 4 ÷ 1 = 4 · 99 ÷ 11 = 9 · 49 ÷ 7 = 7