



# The Case of the Rogue Circuit

Grade 3 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 5-6

**Detective:** \_\_\_\_\_ **Date:** \_\_\_\_\_

A rogue droid has swiped the golden microchip from the Gearspace Cybernetics Lab. Chief Engineer Vance needs your detective skills to scan the evidence, solve the data logs, and identify the thief.

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 droid is** \_\_\_\_\_

# Possible suspects

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

| NAME     | PRIMARY TOOL    | SECONDARY MODULE | DOMINANT HAND | WIRING COLOR     | SYSTEM GLITCH      |
|----------|-----------------|------------------|---------------|------------------|--------------------|
| Sprocket | Plasma Shield   | EMP Blaster      | Left Handed   | Bright Red Wires | Magnet Wand        |
| Axel     | Laser Cutter    | Jet Thruster     | Right Handed  | Silver Wires     | Magnet Wand        |
| Widget   | Plasma Shield   | Jet Thruster     | Right Handed  | Bright Red Wires | Magnet Wand        |
| Rust     | Rocket Boots    | Jet Thruster     | Left Handed   | Bright Red Wires | Magnet Wand        |
| Vector   | Laser Cutter    | Stealth Camo     | Right Handed  | Silver Wires     | Magnet Wand        |
| Circuit  | Tractor Beam    | Jet Thruster     | Left Handed   | Neon Blue Wires  | Water Spray        |
| Chrome   | Laser Cutter    | EMP Blaster      | Right Handed  | Neon Blue Wires  | Water Spray        |
| Radar    | Rocket Boots    | Grapple Hook     | Left Handed   | Bright Red Wires | High Pitch Whistle |
| Tesla    | Laser Cutter    | Solar Panel      | Right Handed  | Bright Red Wires | Magnet Wand        |
| Gizmo    | Laser Cutter    | Solar Panel      | Left Handed   | Bright Red Wires | Magnet Wand        |
| Dynamo   | Plasma Shield   | Solar Panel      | Right Handed  | Bright Red Wires | High Pitch Whistle |
| Beep     | Rocket Boots    | EMP Blaster      | Right Handed  | Bright Red Wires | Magnet Wand        |
| Gearhead | Laser Cutter    | Jet Thruster     | Right Handed  | Silver Wires     | Water Spray        |
| Volt     | Plasma Shield   | Stealth Camo     | Left Handed   | Neon Blue Wires  | Water Spray        |
| Byte     | Tractor Beam    | Solar Panel      | Left Handed   | Silver Wires     | Magnet Wand        |
| Pixel    | Rocket Boots    | Jet Thruster     | Left Handed   | Bright Red Wires | Water Spray        |
| Ada      | Sonic Screecher | Solar Panel      | Left Handed   | Bright Red Wires | Magnet Wand        |
| Anvil    | Plasma Shield   | Solar Panel      | Left Handed   | Silver Wires     | Magnet Wand        |
| Copper   | Rocket Boots    | Stealth Camo     | Left Handed   | Silver Wires     | Water Spray        |
| Cog      | Rocket Boots    | Stealth Camo     | Left Handed   | Bright Red Wires | Magnet Wand        |
| Turing   | Sonic Screecher | Jet Thruster     | Left Handed   | Silver Wires     | High Pitch Whistle |

### CLUE 1

The security console scanner only reports approximate power readings rounded to the nearest ten.

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

A number line from 0 to 10,000. The line is marked with the following numbers in boxes:

- 40 (orange box with 'T')
- 800
- 900
- 9000
- 80
- 500
- 500
- 300
- 80
- 700
- 90
- 400
- 900
- 6000
- 700
- 400
- 40 (orange box with 'T')
- 600
- 6000
- 900
- 6000
- 40 (orange box with 'T')
- 900
- 300
- 500
- 40 (orange box with 'T')
- 800
- 8000
- 300
- 5000
- 400

Round 39 to the nearest ten   $\rightarrow$  **T**

Round 311 to the nearest hundred  → **A**

Round 8,569 to the nearest thousand  →

Round 7,783 to the nearest thousand  → **C**

Round 4,649 to the nearest thousand  → **M**

Round 5,920 to the nearest thousand  →

Round 78 to the nearest ten   $\rightarrow$

Round 923 to the nearest hundred  → **E**

Round 567 to the nearest hundred   $\rightarrow$  **U**

Round 87 to the nearest ten  → **D**

Round 473 to the nearest hundred   $\rightarrow$  **L**

Round 404 to the nearest hundred  →

Round 760 to the nearest hundred   $\rightarrow$  **H**

Round 733 to the nearest hundred   $\rightarrow$  **N**

Scratch space:

## CLUE 2 Addition

To calculate the total spare components needed for repairs, the lab computer adds two supply crates.

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| W   |     |     |     |     |     |     |     |     | W   |     |     |     |     |     |
| 515 | 454 | 675 | 981 | 417 | 201 | 201 | 201 | 409 | 515 | 409 | 420 | 417 | 863 | 675 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 684 | 409 | 981 | 524 | 417 | 524 | 296 | 724 | 413 | 724 | 675 | 420 | 417 | 409 | 464 | 417 |

$160 + 355 = \square \rightarrow \boxed{W}$

$108 + 93 = \square \rightarrow \boxed{S}$

$213 + 251 = \square \rightarrow \boxed{V}$

$181 + 343 = \square \rightarrow \boxed{D}$

$477 + 207 = \square \rightarrow \boxed{H}$

$278 + 142 = \square \rightarrow \boxed{L}$

$338 + 643 = \square \rightarrow \boxed{N}$

$172 + 124 = \square \rightarrow \boxed{R}$

$449 + 414 = \square \rightarrow \boxed{F}$

$262 + 155 = \square \rightarrow \boxed{E}$

$231 + 182 = \square \rightarrow \boxed{B}$

$325 + 399 = \square \rightarrow \boxed{O}$

$364 + 311 = \square \rightarrow \boxed{T}$

$256 + 153 = \square \rightarrow \boxed{A}$

$172 + 282 = \square \rightarrow \boxed{I}$

Scratch space:

## CLUE 3

## Subtraction

Comparing energy reserves before and after the lab break in reveals the precise missing charge.

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

|              |     |              |     |     |     |     |     |     |              |     |     |     |     |     |     |     |     |
|--------------|-----|--------------|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|
| <div>A</div> |     | <div>A</div> |     |     |     |     |     |     | <div>A</div> |     |     |     |     |     |     |     |     |
| 739          | 117 | 739          | 363 | 569 | 839 | 123 | 500 | 739 | 569          | 251 | 483 | 123 | 565 | 709 | 709 | 839 | 251 |

  

|     |     |     |     |     |     |              |     |     |     |
|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|
|     |     |     |     |     |     | <div>A</div> |     |     |     |
| 123 | 481 | 839 | 482 | 246 | 559 | 559          | 739 | 246 | 569 |

$791 - 52 = \square \rightarrow \text{A}$

$249 - 132 = \square \rightarrow \text{M}$

$305 - 182 = \square \rightarrow \text{T}$

$817 - 252 = \square \rightarrow \text{O}$

$530 - 49 = \square \rightarrow \text{H}$

$457 - 206 = \square \rightarrow \text{D}$

$325 - 79 = \square \rightarrow \text{I}$

$1091 - 252 = \square \rightarrow \text{E}$

$812 - 329 = \square \rightarrow \text{S}$

$590 - 227 = \square \rightarrow \text{G}$

$889 - 330 = \square \rightarrow \text{L}$

$619 - 119 = \square \rightarrow \text{W}$

$823 - 341 = \square \rightarrow \text{V}$

$610 - 41 = \square \rightarrow \text{N}$

$750 - 41 = \square \rightarrow \text{P}$

Scratch space:

## CLUE 4

## Multiplication facts (1-12)

Analyzing identical storage racks of microchips requires calculating equal rows of parts.

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

|    |    |    |     |     |    |    |     |    |    |    |    |    |    |    |    |    |
|----|----|----|-----|-----|----|----|-----|----|----|----|----|----|----|----|----|----|
| T  |    |    |     |     |    |    |     |    |    |    |    |    |    |    |    | T  |
| 10 | 30 | 6  | 144 | 121 | 6  | 49 | 6   | 30 | 27 | 12 | 56 | 70 | 99 | 18 | 30 | 10 |
|    |    |    |     |     |    |    |     |    |    |    |    |    |    |    |    |    |
| 70 | 6  | 12 | 8   | 99  | 70 | 6  | 144 |    |    |    |    |    |    |    |    |    |

$10 \times 1 = \square \rightarrow \boxed{\text{T}}$

$2 \times 4 = \square \rightarrow \boxed{\text{W}}$

$2 \times 6 = \square \rightarrow \boxed{\text{D}}$

$10 \times 3 = \square \rightarrow \boxed{\text{H}}$

$11 \times 11 = \square \rightarrow \boxed{\text{C}}$

$8 \times 7 = \square \rightarrow \boxed{\text{B}}$

$1 \times 6 = \square \rightarrow \boxed{\text{E}}$

$12 \times 12 = \square \rightarrow \boxed{\text{S}}$

$2 \times 9 = \square \rightarrow \boxed{\text{G}}$

$9 \times 3 = \square \rightarrow \boxed{\text{A}}$

$7 \times 7 = \square \rightarrow \boxed{\text{N}}$

$7 \times 10 = \square \rightarrow \boxed{\text{R}}$

$9 \times 11 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

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

Distributing backup energy cells evenly across charging docks determines the power per station.

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:**

$77 \div 7 = \boxed{\phantom{00}}$

$24 \div 2 = \boxed{\phantom{00}}$

$110 \div 11 = \boxed{\phantom{00}}$

$84 \div 12 = \boxed{\phantom{00}}$

$72 \div 8 = \boxed{\phantom{00}}$

$6 \div 1 = \boxed{\phantom{00}}$

$48 \div 6 = \boxed{\phantom{00}}$

$33 \div 11 = \boxed{\phantom{00}}$

$40 \div 8 = \boxed{\phantom{00}}$

$24 \div 6 = \boxed{\phantom{00}}$

$11 \div 11 = \boxed{\phantom{00}}$

**Step 2 - cross out the sentence with each answer:**

1. The villain blasted a sonic screecher, then activated stealth camo.
2. The villain blasted a sonic screecher, then recharged with a solar panel.
3. The villain blasted a sonic screecher, then triggered an emp blaster.
4. The villain fired a tractor beam, then triggered an emp blaster.
5. The villain deployed a plasma shield, then recharged with a solar panel.
6. The villain fired a laser cutter, then fired a jet thruster.
7. The villain booted up rocket boots, then activated stealth camo.
8. The villain booted up rocket boots, then triggered an emp blaster.
9. The villain booted up rocket boots, then launched a grapple hook.
10. The villain deployed a plasma shield, then triggered an emp blaster.
11. The villain booted up rocket boots, then fired a jet thruster.
12. The villain fired a laser cutter, then recharged with a solar panel.

# Answer Key

## The Case of the Rogue Circuit

### Culprit: Ada

Sonic Screecher · Solar Panel · Left Handed · Bright Red Wires · Magnet Wand

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

### Clue 1 (Rounding): "THE VILLAIN DOES NOT USE STEALTH CAMO"

Round 39 to the nearest ten = 40 (T) · Round 311 to the nearest hundred = 300 (A) · Round 8,569 to the nearest thousand = 9000 (V) · Round 7,783 to the nearest thousand = 8000 (C) · Round 4,649 to the nearest thousand = 5000 (M) · Round 5,920 to the nearest thousand = 6000 (S) · Round 78 to the nearest ten = 80 (I) · Round 923 to the nearest hundred = 900 (E) · Round 567 to the nearest hundred = 600 (U) · Round 87 to the nearest ten = 90 (D) · Round 473 to the nearest hundred = 500 (L) · Round 404 to the nearest hundred = 400 (O) · Round 760 to the nearest hundred = 800 (H) · Round 733 to the nearest hundred = 700 (N)

### Clue 2 (Addition): "WITNESS SAW A LEFT HANDED ROBOT LEAVE"

$160 + 355 = 515$  (W) ·  $108 + 93 = 201$  (S) ·  $213 + 251 = 464$  (V) ·  $181 + 343 = 524$  (D) ·  $477 + 207 = 684$  (H) ·  $278 + 142 = 420$  (L) ·  $338 + 643 = 981$  (N) ·  $172 + 124 = 296$  (R) ·  $449 + 414 = 863$  (F) ·  $262 + 155 = 417$  (E) ·  $231 + 182 = 413$  (B) ·  $325 + 399 = 724$  (O) ·  $364 + 311 = 675$  (T) ·  $256 + 153 = 409$  (A) ·  $172 + 282 = 454$  (I)

### Clue 3 (Subtraction): "A MAGNET WAND STOPPED THE VILLAIN"

$791 - 52 = 739$  (A) ·  $249 - 132 = 117$  (M) ·  $305 - 182 = 123$  (T) ·  $817 - 252 = 565$  (O) ·  $530 - 49 = 481$  (H) ·  $457 - 206 = 251$  (D) ·  $325 - 79 = 246$  (I) ·  $1091 - 252 = 839$  (E) ·  $812 - 329 = 483$  (S) ·  $590 - 227 = 363$  (G) ·  $889 - 330 = 559$  (L) ·  $619 - 119 = 500$  (W) ·  $823 - 341 = 482$  (V) ·  $610 - 41 = 569$  (N) ·  $750 - 41 = 709$  (P)

### Clue 4 (Multiplication facts (1-12)): "THE SCENE HAD BRIGHT RED WIRES"

$10 \times 1 = 10$  (T) ·  $2 \times 4 = 8$  (W) ·  $2 \times 6 = 12$  (D) ·  $10 \times 3 = 30$  (H) ·  $11 \times 11 = 121$  (C) ·  $8 \times 7 = 56$  (B) ·  $1 \times 6 = 6$  (E) ·  $12 \times 12 = 144$  (S) ·  $2 \times 9 = 18$  (G) ·  $9 \times 3 = 27$  (A) ·  $7 \times 7 = 49$  (N) ·  $7 \times 10 = 70$  (R) ·  $9 \times 11 = 99$  (I)

### Clue 5 (Division facts (1-12)): surviving statement is box 2 → Ada

$77 \div 7 = 11$  ·  $24 \div 2 = 12$  ·  $110 \div 11 = 10$  ·  $84 \div 12 = 7$  ·  $72 \div 8 = 9$  ·  $6 \div 1 = 6$  ·  $48 \div 6 = 8$  ·  $33 \div 11 = 3$  ·  $40 \div 8 = 5$  ·  $24 \div 6 = 4$  ·  $11 \div 11 = 1$