The Gearshift Grid Caper

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

Someone breached the RoboCity Repair Hangar and swapped the master blueprints for the city grid! The detective team must scan the suspect log and track down the rogue bot before the grid reboots.

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 Bot is _____

Possible suspects

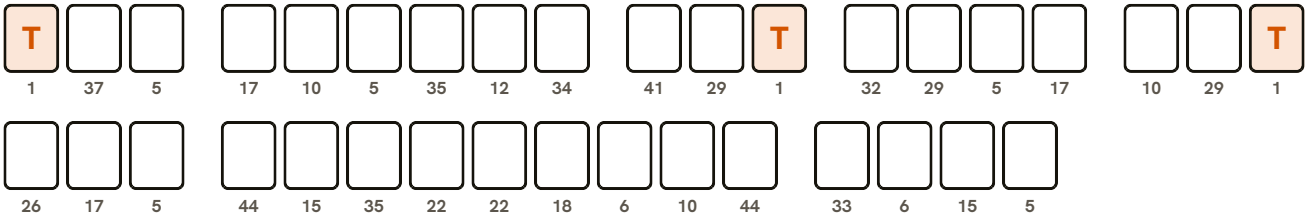
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY GADGET	SECONDARY TOOL	STATUS LIGHT	FRAME FINISH	SYSTEM GLITCH
Sebastian Thrun	EMP Blast	Grappling Wire	Left Light On	Neon Wiring	Water Spray
Ayanna Howard	Laser Torch	Grappling Wire	Right Light On	Copper Rust	Magnet Wand
Joseph Engelberger	Laser Torch	Cyber Claw	Left Light On	Chrome Plating	Magnet Wand
Red Whittaker	Plasma Shield	Radar Dish	Right Light On	Copper Rust	Magnet Wand
Karel Capek	Plasma Shield	Rocket Boots	Right Light On	Copper Rust	Water Spray
Nikola Tesla	Laser Torch	Cyber Claw	Right Light On	Copper Rust	Water Spray
Cynthia Breazeal	Sonic Screech	Rocket Boots	Right Light On	Neon Wiring	Magnet Wand
Alan Turing	Plasma Shield	Grappling Wire	Left Light On	Chrome Plating	Static Shock
Isaac Asimov	Graviton Beam	Radar Dish	Left Light On	Copper Rust	Magnet Wand
Norbert Wiener	EMP Blast	Radar Dish	Left Light On	Neon Wiring	Water Spray
Maja Mataric	Laser Torch	Cyber Claw	Right Light On	Neon Wiring	Water Spray
Grace Hopper	Plasma Shield	Cyber Claw	Left Light On	Neon Wiring	Water Spray
Arthur Clarke	EMP Blast	Cyber Claw	Left Light On	Chrome Plating	Water Spray
Hiroshi Ishiguro	Laser Torch	Radar Dish	Right Light On	Copper Rust	Magnet Wand
James Watt	Graviton Beam	Grappling Wire	Right Light On	Neon Wiring	Static Shock
George Devol	Laser Torch	Radar Dish	Left Light On	Neon Wiring	Magnet Wand
Hedy Lamarr	EMP Blast	Drill Arm	Right Light On	Copper Rust	Magnet Wand
Victor Scheinman	Laser Torch	Grappling Wire	Left Light On	Chrome Plating	Static Shock
Takeo Kanade	Sonic Screech	Rocket Boots	Right Light On	Copper Rust	Water Spray
Raffaello D Andrea	Graviton Beam	Cyber Claw	Left Light On	Copper Rust	Water Spray
Rodney Brooks	Laser Torch	Cyber Claw	Right Light On	Copper Rust	Magnet Wand

CLUE 1 Percentages

The central computer shows a percentage breakdown of power drops across the hangar during the break in.

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



10% of 10 = ☐ → T

20% of 175 = ☐ → A

10% of 290 = ☐ → O

10% of 180 = ☐ → L

10% of 60 = ☐ → I

25% of 60 = ☐ → R

40% of 110 = ☐ → G

25% of 128 = ☐ → D

20% of 185 = ☐ → H

50% of 52 = ☐ → U

20% of 165 = ☐ → W

5% of 100 = ☐ → E

10% of 170 = ☐ → S

25% of 164 = ☐ → B

25% of 136 = ☐ → Y

60% of 20 = ☐ → K

20% of 50 = ☐ → N

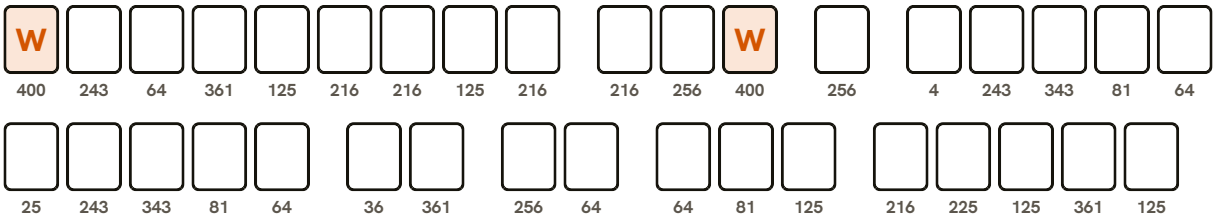
40% of 55 = ☐ → P

Scratch space:

CLUE 2 Exponents

> A secondary power core uses exponent growth tables to measure energy surges recorded near the master console.

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



20^2 = ☐ → W

16^2 = ☐ → A

5^2 = ☐ → L

6^2 = ☐ → O

15^2 = ☐ → C

19^2 = ☐ → N

5^3 = ☐ → E

2^2 = ☐ → R

9^2 = ☐ → H

6^3 = ☐ → S

8^2 = ☐ → T

3^5 = ☐ → I

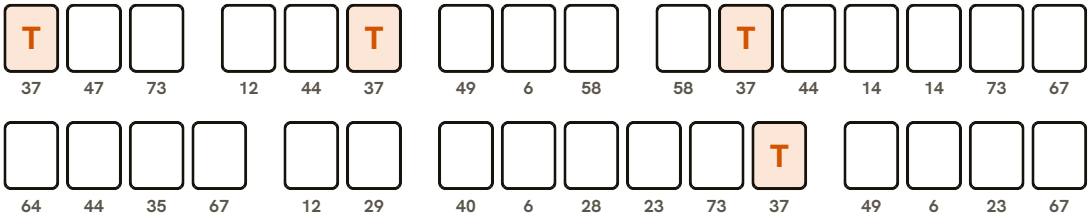
7^3 = ☐ → G

Scratch space:

CLUE 3 Order of operations

The security console requires solving an order of operations sequence to unlock the surveillance tape.

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



25 + 4 × 3 = ☐ → T

12 × 4 - 4 = ☐ → O

15 + 8 × 4 = ☐ → H

12 × 8 - 29 = ☐ → D

9 + 5 × 8 = ☐ → W

12 × 8 - 23 = ☐ → E

12 × 2 - 18 = ☐ → A

50 + 2 × 7 = ☐ → C

7 × 10 - 12 = ☐ → S

4 × 11 - 16 = ☐ → G

5 × 10 - 15 = ☐ → L

3 + 3 × 3 = ☐ → B

7 × 6 - 2 = ☐ → M

10 × 5 - 21 = ☐ → Y

6 × 6 - 13 = ☐ → N

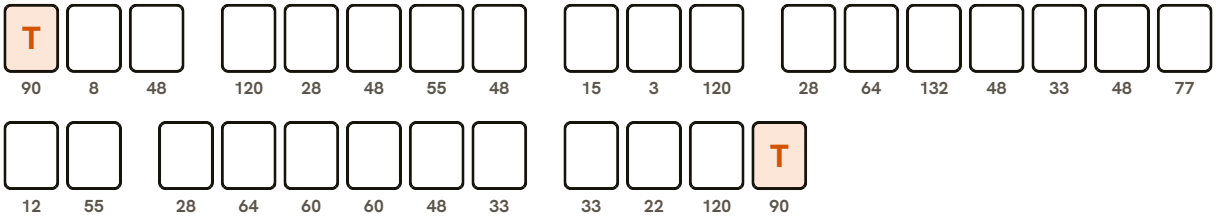
4 + 2 × 5 = ☐ → P

Scratch space:

CLUE 4 Multiplication facts (1-12)

The storage bay supervisor multiplied rows of metal crates to confirm how many parts the intruder bypassed.

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



9 × 10 = ☐ → T

11 × 5 = ☐ → N

11 × 12 = ☐ → V

8 × 6 = ☐ → E

11 × 7 = ☐ → D

8 × 8 = ☐ → O

2 × 11 = ☐ → U

6 × 10 = ☐ → P

1 × 3 = ☐ → A

5 × 3 = ☐ → W

4 × 7 = ☐ → C

4 × 3 = ☐ → I

11 × 3 = ☐ → R

10 × 12 = ☐ → S

8 × 1 = ☐ → H

Scratch space:

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

> The hangar mechanic divided leftover oil canisters equally among the repair units to track missing inventory.

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:

60 ÷ 6 = ☐ | 27 ÷ 3 = ☐ | 7 ÷ 1 = ☐ | 12 ÷ 1 = ☐ | 44 ÷ 4 = ☐

60 ÷ 12 = ☐ | 21 ÷ 7 = ☐ | 96 ÷ 12 = ☐ | 42 ÷ 7 = ☐ | 20 ÷ 5 = ☐

10 ÷ 5 = ☐

Step 2 - cross out the sentence with each answer:

1. The villain fired a laser torch, then swiped supplies with a cyber claw.
2. The villain triggered an emp blast, then scanned the area with a radar dish.
3. The villain triggered an emp blast, then escaped using a grappling wire.
4. The villain activated a graviton beam, then bored a hole using a drill arm.
5. The villain emitted a sonic screech, then scanned the area with a radar dish.
6. The villain deployed a plasma shield, then bored a hole using a drill arm.
7. The villain fired a laser torch, then scanned the area with a radar dish.
8. The villain activated a graviton beam, then zoomed off with rocket boots.
9. The villain deployed a plasma shield, then scanned the area with a radar dish.
10. The villain triggered an emp blast, then bored a hole using a drill arm.
11. The villain triggered an emp blast, then swiped supplies with a cyber claw.
12. The villain fired a laser torch, then zoomed off with rocket boots.

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TEACHER / PARENT

Answer Key

The Gearshift Grid Caper

Culprit: Rodney Brooks

Laser Torch · Cyber Claw · Right Light On · Copper Rust · Magnet Wand

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

Clue 1 (Percentages): "THE SNEAKY BOT DOES NOT USE GRAPPLING WIRE"

10% of 10 = 1 (T) · 20% of 175 = 35 (A) · 10% of 290 = 29 (O) · 10% of 180 = 18 (L) · 10% of 60 = 6 (I) · 25% of 60 = 15 (R) · 40% of 110 = 44 (G) · 25% of 128 = 32 (D) · 20% of 185 = 37 (H) · 50% of 52 = 26 (U) · 20% of 165 = 33 (W) · 5% of 100 = 5 (E) · 10% of 170 = 17 (S) · 25% of 164 = 41 (B) · 25% of 136 = 34 (Y) · 60% of 20 = 12 (K) · 20% of 50 = 10 (N) · 40% of 55 = 22 (P)

Clue 2 (Exponents): "WITNESSES SAW A RIGHT LIGHT ON AT THE SCENE"

20^2 = 400 (W) · 16^2 = 256 (A) · 5^2 = 25 (L) · 6^2 = 36 (O) · 15^2 = 225 (C) · 19^2 = 361 (N) · 5^3 = 125 (E) · 2^2 = 4 (R) · 9^2 = 81 (H) · 6^3 = 216 (S) · 8^2 = 64 (T) · 3^5 = 243 (I) · 7^3 = 343 (G)

Clue 3 (Order of operations): "THE BOT WAS STOPPED COLD BY MAGNET WAND"

25 + 4 × 3 = 37 (T) · 12 × 4 - 4 = 44 (O) · 15 + 8 × 4 = 47 (H) · 12 × 8 - 29 = 67 (D) · 9 + 5 × 8 = 49 (W) · 12 × 8 - 23 = 73 (E) · 12 × 2 - 18 = 6 (A) · 50 + 2 × 7 = 64 (C) · 7 × 10 - 12 = 58 (S) · 4 × 11 - 16 = 28 (G) · 5 × 10 - 15 = 35 (L) · 3 + 3 × 3 = 12 (B) · 7 × 6 - 2 = 40 (M) · 10 × 5 - 21 = 29 (Y) · 6 × 6 - 13 = 23 (N) · 4 + 2 × 5 = 14 (P)

Clue 4 (Multiplication facts (1-12)): "THE SCENE WAS COVERED IN COPPER RUST"

9 × 10 = 90 (T) · 11 × 5 = 55 (N) · 11 × 12 = 132 (V) · 8 × 6 = 48 (E) · 11 × 7 = 77 (D) · 8 × 8 = 64 (O) · 2 × 11 = 22 (U) · 6 × 10 = 60 (P) · 1 × 3 = 3 (A) · 5 × 3 = 15 (W) · 4 × 7 = 28 (C) · 4 × 3 = 12 (I) · 11 × 3 = 33 (R) · 10 × 12 = 120 (S) · 8 × 1 = 8 (H)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Rodney Brooks

60 ÷ 6 = 10 · 27 ÷ 3 = 9 · 7 ÷ 1 = 7 · 12 ÷ 1 = 12 · 44 ÷ 4 = 11 · 60 ÷ 12 = 5 · 21 ÷ 7 = 3 · 96 ÷ 12 = 8 · 42 ÷ 7 = 6 · 20 ÷ 5 = 4 · 10 ÷ 5 = 2