



The Great Robo-Factory Glitch

Grade 5 math · Place value, Addition, Subtraction, Fractions of a number, Division · Reading level grades 3-4

Detective: _____ Date: _____

A rogue bot sabotaged the main assembly line at Gear City Bot Works. Solve the math clues to decode the detective notes and expose the culprit.

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 TOOL	GADGET ARM	ANTENNA TILT	WIRING TYPE	SYSTEM RESET
Friction Fay	Sonic Screwdriver	Solar Panel	Left Tilted Antenna	Silver Braids	Magnet Wipe
Rusty Bolt	Sonic Screwdriver	Rocket Booster	Right Tilted Antenna	Fiber Optics	Oil Splash
Rotor Rita	Plasma Cutter	Solar Panel	Left Tilted Antenna	Fiber Optics	Water Spray
Volt Victor	Hydraulic Gripper	Grappling Hook	Right Tilted Antenna	Silver Braids	Magnet Wipe
Hedy Lamarr	Plasma Cutter	Micro Shield	Right Tilted Antenna	Silver Braids	Oil Splash
Widget Wanda	Electric Drill	Rocket Booster	Right Tilted Antenna	Silver Braids	Magnet Wipe
Cable Cora	Plasma Cutter	Radar Dish	Right Tilted Antenna	Silver Braids	Magnet Wipe
Gimbal Guy	Sonic Screwdriver	Grappling Hook	Left Tilted Antenna	Fiber Optics	Water Spray
Matrix Maya	Sonic Screwdriver	Solar Panel	Right Tilted Antenna	Fiber Optics	Water Spray
Isaac Asimov	Hydraulic Gripper	Solar Panel	Right Tilted Antenna	Silver Braids	Water Spray
Grace Hopper	Laser Welder	Solar Panel	Left Tilted Antenna	Silver Braids	Magnet Wipe
Circuit Clara	Laser Welder	Grappling Hook	Left Tilted Antenna	Copper Cables	Oil Splash
Ada Lovelace	Laser Welder	Grappling Hook	Right Tilted Antenna	Copper Cables	Magnet Wipe
Gearhead Gabe	Laser Welder	Micro Shield	Right Tilted Antenna	Copper Cables	Water Spray
Chip Charlie	Plasma Cutter	Solar Panel	Left Tilted Antenna	Silver Braids	Water Spray
Bolt Benny	Laser Welder	Grappling Hook	Left Tilted Antenna	Fiber Optics	Water Spray
Sprocket Sam	Laser Welder	Micro Shield	Left Tilted Antenna	Silver Braids	Water Spray
Alan Turing	Sonic Screwdriver	Radar Dish	Right Tilted Antenna	Silver Braids	Magnet Wipe
Relay Rose	Plasma Cutter	Grappling Hook	Right Tilted Antenna	Silver Braids	Magnet Wipe
Piston Pete	Sonic Screwdriver	Solar Panel	Right Tilted Antenna	Copper Cables	Water Spray
Dynamo Dave	Plasma Cutter	Grappling Hook	Left Tilted Antenna	Silver Braids	Water Spray

CLUE 1 Place value

The digital serial board displayed a scrambled place value code.

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

T								T									
700	50	900	6000	300	7000	3000	700	900	600	80	500	300	20	2000	6000	300	

					T					T		
80	3000	20	2000	900	700	7000	3000	3000	6000	700	900	80

What is the value of the 7 in 91,744? → **T**

What is the value of the 5 in 47,754? → **H**

What is the value of the 9 in 35,966? → **E**

What is the value of the 3 in 15,381? → **A**

What is the value of the 3 in 973,465? → **O**

What is the value of the 5 in 483,574? → **L**

What is the value of the 8 in 712,680? → **R**

What is the value of the 2 in 692,575? → **K**

What is the value of the 6 in 88,608? → **U**

What is the value of the 2 in 153,723? → **C**

What is the value of the 7 in 27,482? → **B**

What is the value of the 6 in 56,558? → **S**

Scratch space:

CLUE 2

Addition

We tallied up the total battery cells left in the storage room.

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

W									W									
4832	4446	6540	2803	2471	2581	2581	2581	5669	4832	5669	2803	5669	2803	6540	2471	2803	2803	5669
6540	4446	6770	6540	2471	5486	6540	7451	6540	6261	2471	5575	4446	7566	6261	6540			

$2537 + 2295 = \square \rightarrow \boxed{\text{W}}$

$3525 + 3245 = \square \rightarrow \boxed{\text{L}}$

$1485 + 986 = \square \rightarrow \boxed{\text{E}}$

$1167 + 1636 = \square \rightarrow \boxed{\text{N}}$

$2103 + 4158 = \square \rightarrow \boxed{\text{H}}$

$3106 + 1340 = \square \rightarrow \boxed{\text{I}}$

$2628 + 3041 = \square \rightarrow \boxed{\text{A}}$

$2900 + 4551 = \square \rightarrow \boxed{\text{O}}$

$4335 + 2205 = \square \rightarrow \boxed{\text{T}}$

$1657 + 924 = \square \rightarrow \boxed{\text{S}}$

$2835 + 2740 = \square \rightarrow \boxed{\text{R}}$

$3513 + 1973 = \square \rightarrow \boxed{\text{D}}$

$3996 + 3570 = \square \rightarrow \boxed{\text{G}}$

Scratch space:

CLUE 3
Subtraction

Subtracting the damaged gears from inventory revealed a secret log.

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

D					D						D								
5399	7822	8704	7822	2739	5399	7822	6289	5054	3192	7822	5399	1415	5950	1415	3870	2739	7822	6400	
2059	1529	7286	7822	6400	1978	7822	3192	5464	1415	7286	7822								

$5496 - 97 = \square \rightarrow \boxed{\text{D}}$

$6406 - 6 = \square \rightarrow \boxed{\text{T}}$

$7790 - 1840 = \square \rightarrow \boxed{\text{M}}$

$4642 - 1450 = \square \rightarrow \boxed{\text{S}}$

$5742 - 4327 = \square \rightarrow \boxed{\text{A}}$

$8189 - 4319 = \square \rightarrow \boxed{\text{G}}$

$5141 - 3612 = \square \rightarrow \boxed{\text{I}}$

$4301 - 2242 = \square \rightarrow \boxed{\text{W}}$

$10146 - 1442 = \square \rightarrow \boxed{\text{F}}$

$8555 - 1269 = \square \rightarrow \boxed{\text{P}}$

$6213 - 4235 = \square \rightarrow \boxed{\text{O}}$

$8910 - 3856 = \square \rightarrow \boxed{\text{U}}$

$10592 - 2770 = \square \rightarrow \boxed{\text{E}}$

$6703 - 414 = \square \rightarrow \boxed{\text{R}}$

$3733 - 994 = \square \rightarrow \boxed{\text{N}}$

$9978 - 4514 = \square \rightarrow \boxed{\text{C}}$

Scratch space:

CLUE 4
Fractions of a number

A fraction of the charging stations were still active near the lab.

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

S									S								S		
13	33	17	28	17	23	19	11	13	6	21	19	28	11	13	12	39			

S											S
13	34	7	31	17	21	40	21	19	34	11	13

$1/6 \text{ of } 78 = \square \rightarrow \boxed{\text{S}}$

$4/8 \text{ of } 46 = \square \rightarrow \boxed{\text{H}}$

$5/10 \text{ of } 78 = \square \rightarrow \boxed{\text{F}}$

$5/10 \text{ of } 38 = \square \rightarrow \boxed{\text{A}}$

$3/8 \text{ of } 32 = \square \rightarrow \boxed{\text{O}}$

$4/5 \text{ of } 35 = \square \rightarrow \boxed{\text{N}}$

$1/3 \text{ of } 33 = \square \rightarrow \boxed{\text{D}}$

$5/10 \text{ of } 62 = \square \rightarrow \boxed{\text{V}}$

$5/10 \text{ of } 14 = \square \rightarrow \boxed{\text{L}}$

$4/8 \text{ of } 34 = \square \rightarrow \boxed{\text{E}}$

$1/3 \text{ of } 102 = \square \rightarrow \boxed{\text{I}}$

$4/10 \text{ of } 100 = \square \rightarrow \boxed{\text{B}}$

$4/8 \text{ of } 42 = \square \rightarrow \boxed{\text{R}}$

$2/10 \text{ of } 165 = \square \rightarrow \boxed{\text{C}}$

$3/10 \text{ of } 20 = \square \rightarrow \boxed{\text{T}}$

Scratch space:

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

Dividing the spare bolts equally among bins unlocked the final system file.

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:

$36 \div 12 = \boxed{}$

$66 \div 11 = \boxed{}$

$99 \div 9 = \boxed{}$

$4 \div 1 = \boxed{}$

$24 \div 2 = \boxed{}$

$9 \div 9 = \boxed{}$

$25 \div 5 = \boxed{}$

$18 \div 9 = \boxed{}$

$20 \div 2 = \boxed{}$

$48 \div 6 = \boxed{}$

$36 \div 4 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain fired the plasma cutter, then blasted the rocket booster.
2. The villain buzzed the sonic screwdriver, then raised the micro shield.
3. The villain fired the plasma cutter, then swung from the grappling hook.
4. The villain drilled ahead with the electric drill, then raised the micro shield.
5. The villain clamped with the hydraulic gripper, then blasted the rocket booster.
6. The villain clamped with the hydraulic gripper, then swung from the grappling hook.
7. The villain fired the plasma cutter, then scanned with the radar dish.
8. The villain clamped with the hydraulic gripper, then scanned with the radar dish.
9. The villain buzzed the sonic screwdriver, then blasted the rocket booster.
10. The villain drilled ahead with the electric drill, then charged up the solar panel.
11. The villain buzzed the sonic screwdriver, then scanned with the radar dish.
12. The villain activated the laser welder, then raised the micro shield.

Answer Key

The Great Robo-Factory Glitch

Culprit: Cable Cora

Plasma Cutter · Radar Dish · Right Tilted Antenna · Silver Braids · Magnet Wipe

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SABOTEUR LACKS A ROCKET BOOSTER"

What is the value of the 7 in 91,744? = 700 (T) · What is the value of the 5 in 47,754? = 50 (H) · What is the value of the 9 in 35,966? = 900 (E) · What is the value of the 3 in 15,381? = 300 (A) · What is the value of the 3 in 973,465? = 3000 (O) · What is the value of the 5 in 483,574? = 500 (L) · What is the value of the 8 in 712,680? = 80 (R) · What is the value of the 2 in 692,575? = 2000 (K) · What is the value of the 6 in 88,608? = 600 (U) · What is the value of the 2 in 153,723? = 20 (C) · What is the value of the 7 in 27,482? = 7000 (B) · What is the value of the 6 in 56,558? = 6000 (S)

Clue 2 (Addition): "WITNESS SAW AN ANTENNA TILTED TO THE RIGHT"

2537 + 2295 = 4832 (W) · 3525 + 3245 = 6770 (L) · 1485 + 986 = 2471 (E) · 1167 + 1636 = 2803 (N) · 2103 + 4158 = 6261 (H) · 3106 + 1340 = 4446 (I) · 2628 + 3041 = 5669 (A) · 2900 + 4551 = 7451 (O) · 4335 + 2205 = 6540 (T) · 1657 + 924 = 2581 (S) · 2835 + 2740 = 5575 (R) · 3513 + 1973 = 5486 (D) · 3996 + 3570 = 7566 (G)

Clue 3 (Subtraction): "DEFENDER USED A MAGNET WIPE TO ESCAPE"

5496 - 97 = 5399 (D) · 6406 - 6 = 6400 (T) · 7790 - 1840 = 5950 (M) · 4642 - 1450 = 3192 (S) · 5742 - 4327 = 1415 (A) · 8189 - 4319 = 3870 (G) · 5141 - 3612 = 1529 (I) · 4301 - 2242 = 2059 (W) · 10146 - 1442 = 8704 (F) · 8555 - 1269 = 7286 (P) · 6213 - 4235 = 1978 (O) · 8910 - 3856 = 5054 (U) · 10592 - 2770 = 7822 (E) · 6703 - 414 = 6289 (R) · 3733 - 994 = 2739 (N) · 9978 - 4514 = 5464 (C)

Clue 4 (Fractions of a number): "SCENE HAD STRANDS OF SILVER BRAIDS"

1/6 of 78 = 13 (S) · 4/8 of 46 = 23 (H) · 5/10 of 78 = 39 (F) · 5/10 of 38 = 19 (A) · 3/8 of 32 = 12 (O) · 4/5 of 35 = 28 (N) · 1/3 of 33 = 11 (D) · 5/10 of 62 = 31 (V) · 5/10 of 14 = 7 (L) · 4/8 of 34 = 17 (E) · 1/3 of 102 = 34 (I) · 4/10 of 100 = 40 (B) · 4/8 of 42 = 21 (R) · 2/10 of 165 = 33 (C) · 3/10 of 20 = 6 (T)

Clue 5 (Division facts (1-12)): surviving statement is box 7 → Cable Cora

36 ÷ 12 = 3 · 66 ÷ 11 = 6 · 99 ÷ 9 = 11 · 4 ÷ 1 = 4 · 24 ÷ 2 = 12 · 9 ÷ 9 = 1 · 25 ÷ 5 = 5 · 18 ÷ 9 = 2 · 20 ÷ 2 = 10 · 48 ÷ 6 = 8 · 36 ÷ 4 = 9