



The Quantum Lab Heist

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

Detective: _____ **Date:** _____

A rogue researcher has broken into the Apex Particle Laboratory and stolen the central antimatter container. Inspect the evidence left around the research facility to identify the culprit before they escape with the ultimate power source.

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 scientist is _____

Possible suspects

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

NAME	LAB INVENTION	SPECIAL GEAR	DOMINANT HAND	HAIR STYLE	COUNTERMEASURE
Alexander Fleming	Gravity Disruptor	Magnetic Boots	Left-handed	Silver Buzzcut	High Frequency Audio
Alan Turing	Sonic Pulser	Magnetic Boots	Left-handed	Purple Mohawk	High Frequency Audio
Ada Lovelace	Gravity Disruptor	Quantum Visor	Left-handed	Neon Green Hair	High Frequency Audio
Katherine Johnson	Nano Swarm	Magnetic Boots	Right-handed	Silver Buzzcut	Water Sprinklers
Rosalind Franklin	Cryo Laser	Thermal Cloak	Left-handed	Neon Green Hair	Water Sprinklers
Nikola Tesla	Cryo Laser	Particle Scanner	Right-handed	Silver Buzzcut	Water Sprinklers
Galileo Galilei	Sonic Pulser	Thermal Cloak	Left-handed	Neon Green Hair	High Frequency Audio
Albert Einstein	Cryo Laser	Quantum Visor	Right-handed	Neon Green Hair	High Frequency Audio
Jane Goodall	Sonic Pulser	Quantum Visor	Right-handed	Silver Buzzcut	Copper Shielding
Stephen Hawking	Nano Swarm	Thermal Cloak	Right-handed	Purple Mohawk	Water Sprinklers
George Washington Carver	Cryo Laser	Magnetic Boots	Right-handed	Purple Mohawk	Water Sprinklers
Charles Darwin	Gravity Disruptor	Radiation Shield	Left-handed	Silver Buzzcut	Water Sprinklers
Dorothy Hodgkin	Sonic Pulser	Radiation Shield	Left-handed	Neon Green Hair	High Frequency Audio
Niels Bohr	Nano Swarm	Quantum Visor	Left-handed	Neon Green Hair	High Frequency Audio
Carl Sagan	Plasma Cannon	Magnetic Boots	Right-handed	Silver Buzzcut	Copper Shielding
Chien Shiung Wu	Nano Swarm	Magnetic Boots	Right-handed	Neon Green Hair	Water Sprinklers
Michael Faraday	Sonic Pulser	Thermal Cloak	Left-handed	Neon Green Hair	Water Sprinklers
Barbara McClintock	Gravity Disruptor	Particle Scanner	Left-handed	Silver Buzzcut	High Frequency Audio
Isaac Newton	Nano Swarm	Particle Scanner	Right-handed	Neon Green Hair	High Frequency Audio
Rachel Carson	Gravity Disruptor	Particle Scanner	Left-handed	Neon Green Hair	High Frequency Audio
Marie Curie	Nano Swarm	Radiation Shield	Right-handed	Silver Buzzcut	Water Sprinklers

CLUE 1 Percentages

The security system log calculates the code match percentage to narrow down the suspect file.

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

T																	
37	42	44	45	5	19	19	22	5	2	4	10	44	22	34	42	22	4
							T										
2	35	34	22	32	5	22	37	5	35	2	4	42	5	44	19	32	

$5\% \text{ of } 740 = \boxed{} \rightarrow \boxed{T}$

$25\% \text{ of } 20 = \boxed{} \rightarrow \boxed{I}$

$25\% \text{ of } 40 = \boxed{} \rightarrow \boxed{G}$

$20\% \text{ of } 210 = \boxed{} \rightarrow \boxed{H}$

$10\% \text{ of } 190 = \boxed{} \rightarrow \boxed{L}$

$25\% \text{ of } 16 = \boxed{} \rightarrow \boxed{S}$

$20\% \text{ of } 220 = \boxed{} \rightarrow \boxed{E}$

$10\% \text{ of } 220 = \boxed{} \rightarrow \boxed{A}$

$25\% \text{ of } 136 = \boxed{} \rightarrow \boxed{R}$

$50\% \text{ of } 70 = \boxed{} \rightarrow \boxed{O}$

$25\% \text{ of } 128 = \boxed{} \rightarrow \boxed{D}$

$20\% \text{ of } 225 = \boxed{} \rightarrow \boxed{V}$

$20\% \text{ of } 10 = \boxed{} \rightarrow \boxed{N}$

Scratch space:

CLUE 2

Exponents

Quantum sensors record energy surges rising by powers of two across the lab grid.

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

A									A		A					
343	100	9	196	32	8	324	324	324	343	100	343	144	8	27	196	

	A									A						
225	343	32	216	8	216	32	16	196	8	343	196	324	25	8	32	8

$7^3 = \square \rightarrow \boxed{\text{A}}$

$12^2 = \square \rightarrow \boxed{\text{L}}$

$2^5 = \square \rightarrow \boxed{\text{N}}$

$5^2 = \square \rightarrow \boxed{\text{C}}$

$6^3 = \square \rightarrow \boxed{\text{D}}$

$15^2 = \square \rightarrow \boxed{\text{H}}$

$3^3 = \square \rightarrow \boxed{\text{F}}$

$4^2 = \square \rightarrow \boxed{\text{O}}$

$3^2 = \square \rightarrow \boxed{\text{I}}$

$18^2 = \square \rightarrow \boxed{\text{S}}$

$10^2 = \square \rightarrow \boxed{\text{W}}$

$14^2 = \square \rightarrow \boxed{\text{T}}$

$2^3 = \square \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 3
Order of operations

To bypass the override gate, you must solve the precise order of operations on the terminal.

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

H			H															
76	62	41	76	42	73	61	55	10	61	58	19	25	63	10	37	62	30	

	H							H									
59	76	30	73	49	61	37	49	76	61	62	73	59	10	62	49		

$44 + 4 \times 8 = \square \rightarrow \text{H}$

$1 + 9 \times 6 = \square \rightarrow \text{Q}$

$16 + 2 \times 7 = \square \rightarrow \text{O}$

$14 + 6 \times 8 = \square \rightarrow \text{I}$

$9 \times 7 - 4 = \square \rightarrow \text{S}$

$13 + 4 \times 3 = \square \rightarrow \text{Y}$

$11 \times 5 - 6 = \square \rightarrow \text{T}$

$8 \times 8 - 3 = \square \rightarrow \text{E}$

$9 \times 10 - 27 = \square \rightarrow \text{A}$

$28 + 9 \times 5 = \square \rightarrow \text{R}$

$4 + 2 \times 3 = \square \rightarrow \text{U}$

$6 \times 12 - 14 = \square \rightarrow \text{N}$

$9 \times 6 - 12 = \square \rightarrow \text{F}$

$10 \times 7 - 29 = \square \rightarrow \text{G}$

$5 \times 8 - 21 = \square \rightarrow \text{C}$

$7 + 6 \times 5 = \square \rightarrow \text{D}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

An automated sensor sweeps equal laser grids throughout the chemistry wing.

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

A																	
7	121	4	81	121	45	25	4	4	121	5	7	60	25	66	7	72	

132	4	22	16	81	121	16	5	4	15	4	7	44	4	25		

$1 \times 7 = \square \rightarrow \boxed{\text{A}}$

$9 \times 9 = \square \rightarrow \boxed{\text{O}}$

$5 \times 1 = \square \rightarrow \boxed{\text{H}}$

$5 \times 9 = \square \rightarrow \boxed{\text{G}}$

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

$6 \times 11 = \square \rightarrow \boxed{\text{W}}$

$11 \times 2 = \square \rightarrow \boxed{\text{F}}$

$2 \times 2 = \square \rightarrow \boxed{\text{E}}$

$5 \times 5 = \square \rightarrow \boxed{\text{R}}$

$11 \times 12 = \square \rightarrow \boxed{\text{L}}$

$4 \times 11 = \square \rightarrow \boxed{\text{K}}$

$2 \times 8 = \square \rightarrow \boxed{\text{T}}$

$3 \times 5 = \square \rightarrow \boxed{\text{B}}$

$6 \times 12 = \square \rightarrow \boxed{\text{S}}$

$10 \times 6 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

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

The main containment breach requires dividing fuel samples into equal storage vials.

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:

$72 \div 6 = \boxed{}$

$44 \div 4 = \boxed{}$

$40 \div 8 = \boxed{}$

$3 \div 3 = \boxed{}$

$110 \div 11 = \boxed{}$

$27 \div 9 = \boxed{}$

$36 \div 4 = \boxed{}$

$84 \div 12 = \boxed{}$

$40 \div 5 = \boxed{}$

$48 \div 8 = \boxed{}$

$44 \div 11 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain fires the cryo laser, then vanishes using the thermal cloak.
2. The villain activates the gravity disruptor, then scans with the quantum visor.
3. The villain discharges the plasma cannon, then scans with the quantum visor.
4. The villain discharges the plasma cannon, then vanishes using the thermal cloak.
5. The villain activates the gravity disruptor, then pings the particle scanner.
6. The villain unleashes the nano swarm, then pings the particle scanner.
7. The villain triggers the sonic pulser, then deploys the radiation shield.
8. The villain fires the cryo laser, then leaps with magnetic boots.
9. The villain fires the cryo laser, then pings the particle scanner.
10. The villain activates the gravity disruptor, then vanishes using the thermal cloak.
11. The villain triggers the sonic pulser, then vanishes using the thermal cloak.
12. The villain unleashes the nano swarm, then scans with the quantum visor.

Answer Key

The Quantum Lab Heist

Culprit: Ada Lovelace

Gravity Disruptor · Quantum Visor · Left-handed · Neon Green Hair · High Frequency Audio

Trail: Start 21 → Clue 1 18 → Clue 2 9 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE VILLAINS GEAR HAS NO RADIATION SHIELD"

5% of 740 = 37 (T) · 25% of 20 = 5 (I) · 25% of 40 = 10 (G) · 20% of 210 = 42 (H) · 10% of 190 = 19 (L) · 25% of 16 = 4 (S) · 20% of 220 = 44 (E) · 10% of 220 = 22 (A) · 25% of 136 = 34 (R) · 50% of 70 = 35 (O) · 25% of 128 = 32 (D) · 20% of 225 = 45 (V) · 20% of 10 = 2 (N)

Clue 2 (Exponents): "A WITNESS SAW A LEFT HANDED NOTE AT SCENE"

$7^3 = 343$ (A) · $12^2 = 144$ (L) · $2^5 = 32$ (N) · $5^2 = 25$ (C) · $6^3 = 216$ (D) · $15^2 = 225$ (H) · $3^3 = 27$ (F) · $4^2 = 16$ (O) · $3^2 = 9$ (I) · $18^2 = 324$ (S) · $10^2 = 100$ (W) · $14^2 = 196$ (T) · $2^3 = 8$ (E)

Clue 3 (Order of operations): "HIGH FREQUENCY AUDIO SHORTED THEIR SUIT"

$44 + 4 \times 8 = 76$ (H) · $1 + 9 \times 6 = 55$ (Q) · $16 + 2 \times 7 = 30$ (O) · $14 + 6 \times 8 = 62$ (I) · $9 \times 7 - 4 = 59$ (S) · $13 + 4 \times 3 = 25$ (Y) · $11 \times 5 - 6 = 49$ (T) · $8 \times 8 - 3 = 61$ (E) · $9 \times 10 - 27 = 63$ (A) · $28 + 9 \times 5 = 73$ (R) · $4 + 2 \times 3 = 10$ (U) · $6 \times 12 - 14 = 58$ (N) · $9 \times 6 - 12 = 42$ (F) · $10 \times 7 - 29 = 41$ (G) · $5 \times 8 - 21 = 19$ (C) · $7 + 6 \times 5 = 37$ (D)

Clue 4 (Multiplication facts (1-12)): "A NEON GREEN HAIR WAS LEFT ON THE BEAKER"

$1 \times 7 = 7$ (A) · $9 \times 9 = 81$ (O) · $5 \times 1 = 5$ (H) · $5 \times 9 = 45$ (G) · $11 \times 11 = 121$ (N) · $6 \times 11 = 66$ (W) · $11 \times 2 = 22$ (F) · $2 \times 2 = 4$ (E) · $5 \times 5 = 25$ (R) · $11 \times 12 = 132$ (L) · $4 \times 11 = 44$ (K) · $2 \times 8 = 16$ (T) · $3 \times 5 = 15$ (B) · $6 \times 12 = 72$ (S) · $10 \times 6 = 60$ (I)

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

$72 \div 6 = 12$ · $44 \div 4 = 11$ · $40 \div 8 = 5$ · $3 \div 3 = 1$ · $110 \div 11 = 10$ · $27 \div 9 = 3$ · $36 \div 4 = 9$ · $84 \div 12 = 7$ · $40 \div 5 = 8$ · $48 \div 8 = 6$ · $44 \div 11 = 4$