



The Mystery of Lunar Station Omega

Grade 5 math · Fractions of a number, Multiplication, Multi-step word problems, Order of operations · Reading level grades 5-6

Detective: _____ Date: _____

A mysterious rogue astronaut has disrupted systems across Lunar Station Omega. The crew must analyze evidence and decode system logs to identify the saboteur before the next orbital passage.

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 saboteur 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	MOBILITY GEAR	DOMINANT HAND	HAIRSTYLE	SENSORY VULNERABILITY
Cyrus Drake	Magnetic Claw	Stealth Cloak	RIGHT HANDED	SHORT CROP	LOUD FREQUENCY
Freya Lind	Magnetic Claw	Jet Pack	LEFT HANDED	SHORT CROP	COLD DRAFT
Mira Sorokin	Ion Blaster	Stealth Cloak	RIGHT HANDED	BUZZ CUT	COLD DRAFT
Kai Tanaka	Laser Cutter	Jet Pack	LEFT HANDED	BUZZ CUT	COLD DRAFT
Hugo Silva	Laser Cutter	Stealth Cloak	LEFT HANDED	BUZZ CUT	COLD DRAFT
Leo Sterling	Laser Cutter	Gravity Boot	LEFT HANDED	BUZZ CUT	COLD DRAFT
Valerie Hayes	Laser Cutter	Hologram Decoy	LEFT HANDED	BUZZ CUT	COLD DRAFT
Maya Lin	Magnetic Claw	Stealth Cloak	LEFT HANDED	SHORT CROP	BRIGHT LIGHT
Lyra Frost	Magnetic Claw	Hologram Decoy	LEFT HANDED	BUZZ CUT	LOUD FREQUENCY
Zane Cooper	Plasma Torch	Thermal Shield	LEFT HANDED	BUZZ CUT	COLD DRAFT
Jax Mercer	Magnetic Claw	Hologram Decoy	LEFT HANDED	SHORT CROP	LOUD FREQUENCY
Nova Reyes	Plasma Torch	Jet Pack	RIGHT HANDED	PONYTAIL	LOUD FREQUENCY
Rowan Cruz	Laser Cutter	Jet Pack	RIGHT HANDED	PONYTAIL	COLD DRAFT
Nia Kamau	Magnetic Claw	Thermal Shield	RIGHT HANDED	PONYTAIL	COLD DRAFT
Aria Thorne	Ion Blaster	Hologram Decoy	RIGHT HANDED	BUZZ CUT	LOUD FREQUENCY
Orion Blake	Laser Cutter	Hologram Decoy	LEFT HANDED	SHORT CROP	LOUD FREQUENCY
Astrid Vance	Laser Cutter	Gravity Boot	RIGHT HANDED	BUZZ CUT	COLD DRAFT
Callum Connor	Laser Cutter	Gravity Boot	LEFT HANDED	SHORT CROP	BRIGHT LIGHT
Darius Vance	Sonic Scanner	Stealth Cloak	LEFT HANDED	PONYTAIL	COLD DRAFT
Tariq Mansoor	Plasma Torch	Thermal Shield	LEFT HANDED	PONYTAIL	BRIGHT LIGHT
Ezra Brooks	Plasma Torch	Gravity Boot	RIGHT HANDED	SHORT CROP	BRIGHT LIGHT

Fractions of a number

Commander Vance analyzed the remaining oxygen canister fractions to narrow down the gear list.

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

3 9 7 18 26 32 23 3 7 2 25 10 23 7 18 12 23 3

2 18 7 26 34 25 26 17 37 3 28 32 23 23 3

5/10 of 6 = → **T**

$2/3$ of $3 = \square \rightarrow \boxed{\text{U}}$

$$2/6 \text{ of } 51 = \boxed{} \rightarrow \mathbf{v}$$

$5/10$ of $20 = \boxed{} \rightarrow \boxed{\text{D}}$

$4/6$ of $51 = \boxed{} \rightarrow \boxed{\text{G}}$

$4/8$ of $18 = \boxed{} \rightarrow \boxed{\text{H}}$

4/8 of 14 = → **E**

$\frac{3}{8}$ of 48 = $\rightarrow$ **S**

$$5/6 \text{ of } 30 = \boxed{} \rightarrow \boxed{\text{R}}$$

5/10 of 24 = → **N**

$2/5$ of 70 = $\rightarrow$ **Y**

$3/6$ of $64 = \boxed{} \rightarrow \boxed{\text{B}}$

4/6 of 39 = → **A**

$1/6$ of 138 = $\rightarrow$

$$\frac{1}{2} \text{ of } 74 = \boxed{} \rightarrow \boxed{\text{I}}$$

Scratch space:

CLUE 2

Multiplication facts (1-12)

The chief engineer calculated total power grid surges across multiple station bays.

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

S											S	S				
20	121	36	35	18	28	45	88	32	55	80	20	20	56	55	72	70
32	121	50	45	56	70	54	10	121	10	18	121	3	70	28	18	

$2 \times 10 = \square \rightarrow \text{S}$

$9 \times 8 = \square \rightarrow \text{W}$

$5 \times 9 = \square \rightarrow \text{T}$

$4 \times 8 = \square \rightarrow \text{L}$

$5 \times 7 = \square \rightarrow \text{U}$

$3 \times 1 = \square \rightarrow \text{P}$

$12 \times 3 = \square \rightarrow \text{C}$

$11 \times 11 = \square \rightarrow \text{E}$

$9 \times 2 = \square \rightarrow \text{R}$

$4 \times 7 = \square \rightarrow \text{I}$

$10 \times 8 = \square \rightarrow \text{G}$

$5 \times 10 = \square \rightarrow \text{F}$

$10 \times 7 = \square \rightarrow \text{A}$

$11 \times 8 = \square \rightarrow \text{Y}$

$10 \times 1 = \square \rightarrow \text{D}$

$6 \times 9 = \square \rightarrow \text{N}$

$5 \times 11 = \square \rightarrow \text{O}$

$8 \times 7 = \square \rightarrow \text{H}$

Scratch space:

CLUE 3

Multi-step word problems

Cadet Lin reviewed the steps of the airlock cycle log to trace the suspect's movements.

Solve each problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with C T .

23 12 64 63 63 35 90 48

Astro-cadet earned 3 star charts in each of 2 rounds, plus 23 bonus star charts. Then 6 star charts were lost. How many star charts are left?

Answer: → C

Astro-cadet filled 4 boxes with 6 oxygen canisters each, then found 24 more oxygen canisters. How many oxygen canisters are there in all?

Answer: → F

There were 322 comm relays in all. 7 comm relays were set aside. The rest were shared equally among 9 space crew. How many comm relays did each get?

Answer: → R

Astro-cadet collected 97 oxygen canisters in the morning and 155 oxygen canisters in the afternoon, then split them equally among 4 space crew. How many oxygen canisters did each get?

Answer: → D

Astro-cadet earned 4 comm relays in each of 3 rounds, plus 85 bonus comm relays. Then 7 comm relays were lost. How many comm relays are left?

Answer: → A

Astro-cadet collected 18 quantum crystals in the morning and 18 quantum crystals in the afternoon, then split them equally among 3 space crew. How many quantum crystals did each get?

Answer: → O

There were 153 solar cells in all. 25 solar cells were set aside. The rest were shared equally among 2 space crew. How many solar cells did each get?

Answer: → L

Scratch space:

CLUE 4 Order of operations

The data analyst followed exact system priority codes to decrypt the security footage.

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

Diagram illustrating a sequence of numbers arranged in two rows of boxes. The first row contains 16 boxes, and the second row contains 9 boxes. The first box in the first row is highlighted orange and contains the letter 'H'.

Row 1 (Left to Right):

- Box 1: H (highlighted orange)
- Box 2: (empty)
- Box 3: (empty)
- Box 4: (empty)
- Box 5: (empty)
- Box 6: (empty)
- Box 7: (empty)
- Box 8: (empty)
- Box 9: (empty)
- Box 10: (empty)
- Box 11: (empty)
- Box 12: (empty)
- Box 13: (empty)
- Box 14: (empty)
- Box 15: (empty)
- Box 16: (empty)

Row 2 (Left to Right):

- Box 1: (empty)
- Box 2: (empty)
- Box 3: (empty)
- Box 4: (empty)
- Box 5: (empty)
- Box 6: (empty)
- Box 7: (empty)
- Box 8: (empty)
- Box 9: (empty)

Numbers below the boxes (Row 1 to Row 2):

- 12, 27, 45, 19, 16, 46, 19, 27, 17, 36, 16, 53, 49, 43, 17, 36, 16, 12, 49, 24
- 27, 54, 43, 69, 69, 10, 43, 46

$3 + 3 \times 3 = \boxed{} \rightarrow \boxed{\text{H}}$

$$43 + 2 \times 3 = \boxed{} \rightarrow \boxed{0}$$

$12 \times 6 - 26 = \boxed{} \rightarrow \boxed{\text{T}}$

$$1 + 5 \times 3 = \boxed{} \rightarrow \boxed{\mathbf{S}}$$

$10 \times 8 - 27 = \boxed{} \rightarrow \boxed{\text{F}}$

$$3 + 4 \times 4 = \boxed{} \rightarrow \boxed{\mathbf{R}}$$

$$12 \times 5 - 15 = \boxed{} \rightarrow \boxed{\text{I}}$$

$12 + 5 \times 3 = \boxed{} \rightarrow \boxed{\mathbf{A}}$

$$7 \times 11 - 8 = \boxed{} \rightarrow \boxed{\mathbf{Z}}$$

$$19 + 8 \times 3 = \boxed{} \rightarrow \boxed{\text{U}}$$

$1 + 3 \times 3 = \boxed{} \rightarrow \boxed{\text{C}}$

$$18 + 4 \times 9 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

$$11 \times 5 - 19 = \boxed{} \rightarrow \boxed{\text{D}}$$

$14 + 5 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{W}}$

$$13 + 2 \times 2 = \boxed{} \rightarrow \boxed{\text{N}}$$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

The science officer measured fractional light reflection from micro-dust near the control panel.

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:

$3/10 \text{ of } 10 = \boxed{}$

$2/5 \text{ of } 25 = \boxed{}$

$3/4 \text{ of } 12 = \boxed{}$

$2/4 \text{ of } 2 = \boxed{}$

$2/6 \text{ of } 18 = \boxed{}$

$1/6 \text{ of } 12 = \boxed{}$

$1/6 \text{ of } 66 = \boxed{}$

$2/3 \text{ of } 6 = \boxed{}$

$1/6 \text{ of } 48 = \boxed{}$

$2/6 \text{ of } 36 = \boxed{}$

$3/6 \text{ of } 14 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain unlocked the specimen lab, then marched away in a gravity boot.
2. The villain scrambled the navigation radar, then fled using a jet pack.
3. The villain overrode the station mainframe, then blocked laser fire with a thermal shield.
4. The villain unlocked the specimen lab, then escaped by dropping a hologram decoy.
5. The villain vented the coolant pressure, then escaped by dropping a hologram decoy.
6. The villain scrambled the navigation radar, then blocked laser fire with a thermal shield.
7. The villain drained the secondary battery, then snuck past sensors with a stealth cloak.
8. The villain scrambled the navigation radar, then marched away in a gravity boot.
9. The villain vented the coolant pressure, then snuck past sensors with a stealth cloak.
10. The villain vented the coolant pressure, then fled using a jet pack.
11. The villain drained the secondary battery, then blocked laser fire with a thermal shield.
12. The villain overrode the station mainframe, then snuck past sensors with a stealth cloak.

Answer Key

The Mystery of Lunar Station Omega

Culprit: Valerie Hayes

Laser Cutter · Hologram Decoy · LEFT HANDED · BUZZ CUT · COLD DRAFT

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE SABOTEUR DOES NOT USE A GRAVITY BOOT"

$5/10$ of 6 = 3 (T) · $2/3$ of 3 = 2 (U) · $2/6$ of 51 = 17 (V) · $5/10$ of 20 = 10 (D) · $4/6$ of 51 = 34 (G) · $4/8$ of 18 = 9 (H) · $4/8$ of 14 = 7 (E) · $3/8$ of 48 = 18 (S) · $5/6$ of 30 = 25 (R) · $5/10$ of 24 = 12 (N) · $2/5$ of 70 = 28 (Y) · $3/6$ of 64 = 32 (B) · $4/6$ of 39 = 26 (A) · $1/6$ of 138 = 23 (O) · $1/2$ of 74 = 37 (I)

Clue 2 (Multiplication facts (1-12)): "SECURITY LOGS SHOW A LEFT HANDED REPAIR"

$2 \times 10 = 20$ (S) · $9 \times 8 = 72$ (W) · $5 \times 9 = 45$ (T) · $4 \times 8 = 32$ (L) · $5 \times 7 = 35$ (U) · $3 \times 1 = 3$ (P) · $12 \times 3 = 36$ (C) · $11 \times 11 = 121$ (E) · $9 \times 2 = 18$ (R) · $4 \times 7 = 28$ (I) · $10 \times 8 = 80$ (G) · $5 \times 10 = 50$ (F) · $10 \times 7 = 70$ (A) · $11 \times 8 = 88$ (Y) · $10 \times 1 = 10$ (D) · $6 \times 9 = 54$ (N) · $5 \times 11 = 55$ (O) · $8 \times 7 = 56$ (H)

Clue 3 (Multi-step word problems): "COLD DRAFT"

Astro-cadet earned 3 star charts in each of 2 rounds, plus 23 bonus star charts. Then 6 star charts were lost. How many star charts are left? = 23 (C) · Astro-cadet filled 4 boxes with 6 oxygen canisters each, then found 24 more oxygen canisters. How many oxygen canisters are there in all? = 48 (F) · There were 322 comm relays in all. 7 comm relays were set aside. The rest were shared equally among 9 space crew. How many comm relays did each get? = 35 (R) · Astro-cadet collected 97 oxygen canisters in the morning and 155 oxygen canisters in the afternoon, then split them equally among 4 space crew. How many oxygen canisters did each get? = 63 (D) · Astro-cadet earned 4 comm relays in each of 3 rounds, plus 85 bonus comm relays. Then 7 comm relays were lost. How many comm relays are left? = 90 (A) · Astro-cadet collected 18 quantum crystals in the morning and 18 quantum crystals in the afternoon, then split them equally among 3 space crew. How many quantum crystals did each get? = 12 (O) · There were 153 solar cells in all. 25 solar cells were set aside. The rest were shared equally among 2 space crew. How many solar cells did each get? = 64 (L)

Clue 4 (Order of operations): "HAIR STRANDS FOUND SHOW A BUZZ CUT"

$3 + 3 \times 3 = 12$ (H) · $43 + 2 \times 3 = 49$ (O) · $12 \times 6 - 26 = 46$ (T) · $1 + 5 \times 3 = 16$ (S) · $10 \times 8 - 27 = 53$ (F) · $3 + 4 \times 4 = 19$ (R) · $12 \times 5 - 15 = 45$ (I) · $12 + 5 \times 3 = 27$ (A) · $7 \times 11 - 8 = 69$ (Z) · $19 + 8 \times 3 = 43$ (U) · $1 + 3 \times 3 = 10$ (C) · $18 + 4 \times 9 = 54$ (B) · $11 \times 5 - 19 = 36$ (D) · $14 + 5 \times 2 = 24$ (W) · $13 + 2 \times 2 = 17$ (N)

Clue 5 (Fractions of a number): surviving statement is box 5 → Valerie Hayes

$3/10$ of 10 = 3 · $2/5$ of 25 = 10 · $3/4$ of 12 = 9 · $2/4$ of 2 = 1 · $2/6$ of 18 = 6 · $1/6$ of 12 = 2 · $1/6$ of 66 = 11 · $2/3$ of 6 = 4 · $1/6$ of 48 = 8 · $2/6$ of 36 = 12 · $3/6$ of 14 = 7