



Mystery of the Skyport Saboteur

Grade 8 math · Place value, Addition, Subtraction, Multiplication, Division · Reading level grades 7-9

Detective: _____ **Date:** _____

A rogue Sky Raider hijacked the main navigation beam at Stratos Skyport, leaving incoming airships blind in heavy fog. Chief Navigator Vance needs your deductive skills to solve math clues, clear suspects, and pinpoint the perpetrator before the fleet runs out of fuel.

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 Sky Raider is _____

Possible suspects

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

NAME	GEAR GADGET	SECONDARY TOOL	HEADGEAR CHOICE	HAIRSTYLE	TACTICAL FLAW
Pilot Ruby	smoke bomb	signal jammer	wears helmet	braided ponytail	heavy gust
Sentry Cole	sonic pulse	turbo booster	wears goggles	braided ponytail	heavy gust
Tech Silas	glider wing	night vision	wears helmet	cropped buzz	bright flash
Cadet Owen	glider wing	signal jammer	wears helmet	spiky mohawk	loud whistle
Officer Zara	sonic pulse	flare gun	wears helmet	spiky mohawk	loud whistle
Pilot Maya	sonic pulse	flare gun	wears helmet	cropped buzz	heavy gust
Officer Milo	decoy drone	signal jammer	wears goggles	braided ponytail	bright flash
Cadet Piper	grapple hook	flare gun	wears goggles	braided ponytail	bright flash
Tech Elena	decoy drone	signal jammer	wears helmet	cropped buzz	loud whistle
Scout Brody	grapple hook	turbo booster	wears helmet	braided ponytail	bright flash
Navigator Nora	grapple hook	night vision	wears goggles	spiky mohawk	loud whistle
Engineer Eli	smoke bomb	jet pack	wears goggles	spiky mohawk	loud whistle
Officer Iris	grapple hook	jet pack	wears helmet	braided ponytail	heavy gust
Captain Jax	grapple hook	flare gun	wears helmet	braided ponytail	heavy gust
Navigator Kai	glider wing	flare gun	wears helmet	cropped buzz	heavy gust
Navigator Luca	sonic pulse	night vision	wears helmet	braided ponytail	heavy gust
Rigger Tess	decoy drone	turbo booster	wears helmet	braided ponytail	bright flash
Sentry Mason	grapple hook	signal jammer	wears helmet	braided ponytail	heavy gust
Scout Vera	glider wing	signal jammer	wears helmet	spiky mohawk	heavy gust
Pilot Axel	sonic pulse	jet pack	wears helmet	spiky mohawk	loud whistle
Engineer Nina	grapple hook	flare gun	wears goggles	spiky mohawk	heavy gust

CLUE 1

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

The diagram shows 18 boxes arranged in two rows. The top row has 15 boxes, and the bottom row has 3 boxes. Each box contains a number. The boxes are arranged in groups of three, with the first box in each group containing the letter 'T'.

T																	
70	300	30	20	5000	900	40	70	30	10	500	80	40	30	20	100	40	70
10	20	30	5000	90	4000	5000	500	30	3000	10	100						

What is the value of the 7 in 443,279? → **T**

What is the value of the 9 in 588,494? → **F**

What is the value of the 3 in 873,120? → **G**

What is the value of the 3 in 478,136? → **E**

What is the value of the 1 in 255,138? → **N**

What is the value of the 9 in 838,957? → **B**

What is the value of the 8 in 45,080? → **D**

What is the value of the 2 in 776,928? → **S**

What is the value of the 4 in 56,149? → **O**

What is the value of the 5 in 97,530? → **R**

What is the value of the 3 in 284,357? → **H**

What is the value of the 1 in 26,316? → **U**

What is the value of the 4 in 14,651? → **L**

What is the value of the 5 in 85,493? → **A**

Scratch space:

CLUE 2 Addition

Counting supply crates stored in the main hangar reveals hidden cargo figures.

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

W												W							
3235	5176	6282	4508	8356	6155	6155	8356	6155	6155	5720	3235	5720	5438	8356	5720	8677	3215		
8890	3661	5176	7411	5438	6282	5438	8356	3661	3333	8356	6282								

$$1626 + 1609 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$2121 + 2387 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$2263 + 1070 = \boxed{} \rightarrow \boxed{\text{M}}$$

$$3225 + 2495 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$1635 + 2026 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$3766 + 1672 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$1877 + 1338 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$2061 + 4094 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$4471 + 3885 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$1995 + 3181 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$5623 + 3267 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$3748 + 4929 = \boxed{} \rightarrow \boxed{\text{V}}$$

$$4065 + 3346 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$4226 + 2056 = \boxed{} \rightarrow \boxed{\text{T}}$$

Scratch space:

Subtraction

Comparing energy meter logs before and after the power surge shows total energy loss.

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

Diagram illustrating the sequence of operations for the first pass of the bubble sort algorithm. The array is shown with elements in boxes, and the current element being compared is highlighted in orange.

Row 1: 8087, 1280, 7943, 3109, 5003, 6649, 4176, 8087, 7943, 3356, 3274, 3754, 5003, 3109. The element 8087 at index 7 is highlighted.

Row 2: 3109, 8087, 4176, 4616, 4616, 7943, 7780, 6649, 6119, 5003, 1280, 7943, 5003, 4157, 6119, 2305, 3356, 3109, 8087. The element 8087 at index 1 is highlighted.

$8430 - 343 = \boxed{} \rightarrow \boxed{\text{T}}$

$$8533 - 4376 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$10441 - 4322 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$5884 - 4604 = \boxed{} \rightarrow \boxed{\text{H}}$$

$7787 - 4513 = \boxed{} \rightarrow \boxed{\text{R}}$

$$5245 - 1491 = \boxed{} \rightarrow \boxed{\text{W}}$$

$11493 - 4844 = \boxed{} \rightarrow \boxed{\mathbf{B}}$

$$7213 - 3037 = \boxed{} \rightarrow \boxed{0}$$

$$8682 - 4066 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$3385 - 276 = \boxed{} \rightarrow \boxed{\text{S}}$$

$8695 - 3692 = \boxed{} \rightarrow \boxed{\text{A}}$

$$10790 - 2847 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$4324 - 968 = \boxed{} \rightarrow \boxed{\text{U}}$$

$6362 - 4057 = \boxed{} \rightarrow \boxed{\text{G}}$

$11487 - 3707 = \boxed{} \rightarrow \boxed{\text{D}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

Inspecting arranged rows of flight battery banks gives an exact count of charged units.

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

R						R						R					R		
33	80	40	60	16	80	33	80	108	7	63	96	33	121	96	45	80	33	132	
							R												
132	7	60	48	63	45	33	63	96	108	80	108	4	60	24	144	3	63	96	27

$11 \times 3 = \square \rightarrow \text{R}$

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

$12 \times 12 = \square \rightarrow \text{Y}$

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

$6 \times 4 = \square \rightarrow \text{N}$

$8 \times 12 = \square \rightarrow \text{I}$

$3 \times 9 = \square \rightarrow \text{L}$

$9 \times 7 = \square \rightarrow \text{A}$

$7 \times 1 = \square \rightarrow \text{H}$

$8 \times 6 = \square \rightarrow \text{W}$

$5 \times 12 = \square \rightarrow \text{O}$

$1 \times 4 = \square \rightarrow \text{P}$

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

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

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

$9 \times 12 = \square \rightarrow \text{D}$

$8 \times 2 = \square \rightarrow \text{V}$

$12 \times 11 = \square \rightarrow \text{S}$

Scratch space:

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

Distributing radio frequencies equally among patrol squads reveals the hidden channel.

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:

$108 \div 12 = \boxed{}$

$5 \div 1 = \boxed{}$

$8 \div 8 = \boxed{}$

$8 \div 2 = \boxed{}$

$60 \div 10 = \boxed{}$

$144 \div 12 = \boxed{}$

$24 \div 8 = \boxed{}$

$4 \div 2 = \boxed{}$

$30 \div 3 = \boxed{}$

$64 \div 8 = \boxed{}$

$66 \div 6 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain scrambled sensor grids with a sonic pulse, then tracked patrols using night vision.
2. The villain banked sharply on a glider wing, then signaled allies using a flare gun.
3. The villain banked sharply on a glider wing, then escaped quickly using a jet pack.
4. The villain banked sharply on a glider wing, then blocked comms with a signal jammer.
5. The villain swung across the deck with a grapple hook, then blocked comms with a signal jammer.
6. The villain swung across the deck with a grapple hook, then tracked patrols using night vision.
7. The villain swung across the deck with a grapple hook, then escaped quickly using a jet pack.
8. The villain scrambled sensor grids with a sonic pulse, then signaled allies using a flare gun.
9. The villain vanished behind a thick smoke bomb, then blocked comms with a signal jammer.
10. The villain distracted guards using a decoy drone, then blocked comms with a signal jammer.
11. The villain banked sharply on a glider wing, then outran security with a turbo booster.
12. The villain vanished behind a thick smoke bomb, then escaped quickly using a jet pack.

Answer Key

Mystery of the Skyport Saboteur

Culprit: Officer Iris

grapple hook · jet pack · wears helmet · braided ponytail · heavy gust

Trail: Start 21 → Clue 1 15 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SABOTEUR DOES NOT USE A FLARE GUN"

What is the value of the 7 in 443,279? = 70 (T) · What is the value of the 9 in 588,494? = 90 (F) · What is the value of the 3 in 873,120? = 3000 (G) · What is the value of the 3 in 478,136? = 30 (E) · What is the value of the 1 in 255,138? = 100 (N) · What is the value of the 9 in 838,957? = 900 (B) · What is the value of the 8 in 45,080? = 80 (D) · What is the value of the 2 in 776,928? = 20 (S) · What is the value of the 4 in 56,149? = 40 (O) · What is the value of the 5 in 97,530? = 500 (R) · What is the value of the 3 in 284,357? = 300 (H) · What is the value of the 1 in 26,316? = 10 (U) · What is the value of the 4 in 14,651? = 4000 (L) · What is the value of the 5 in 85,493? = 5000 (A)

Clue 2 (Addition): "WITNESSES SAW A HEAVY FLIGHT HELMET"

$1626 + 1609 = 3235$ (W) · $2121 + 2387 = 4508$ (N) · $2263 + 1070 = 3333$ (M) · $3225 + 2495 = 5720$ (A) · $1635 + 2026 = 3661$ (L) · $3766 + 1672 = 5438$ (H) · $1877 + 1338 = 3215$ (Y) · $2061 + 4094 = 6155$ (S) · $4471 + 3885 = 8356$ (E) · $1995 + 3181 = 5176$ (I) · $5623 + 3267 = 8890$ (F) · $3748 + 4929 = 8677$ (V) · $4065 + 3346 = 7411$ (G) · $4226 + 2056 = 6282$ (T)

Clue 3 (Subtraction): "THE SABOTEUR WAS STOPPED BY A HEAVY GUST"

$8430 - 343 = 8087$ (T) · $8533 - 4376 = 4157$ (V) · $10441 - 4322 = 6119$ (Y) · $5884 - 4604 = 1280$ (H) · $7787 - 4513 = 3274$ (R) · $5245 - 1491 = 3754$ (W) · $11493 - 4844 = 6649$ (B) · $7213 - 3037 = 4176$ (O) · $8682 - 4066 = 4616$ (P) · $3385 - 276 = 3109$ (S) · $8695 - 3692 = 5003$ (A) · $10790 - 2847 = 7943$ (E) · $4324 - 968 = 3356$ (U) · $6362 - 4057 = 2305$ (G) · $11487 - 3707 = 7780$ (D)

Clue 4 (Multiplication facts (1-12)): "RECOVERED HAIR FIBERS SHOW A BRAIDED PONYTAIL"

$11 \times 3 = 33$ (R) · $10 \times 8 = 80$ (E) · $12 \times 12 = 144$ (Y) · $11 \times 11 = 121$ (F) · $6 \times 4 = 24$ (N) · $8 \times 12 = 96$ (I) · $3 \times 9 = 27$ (L) · $9 \times 7 = 63$ (A) · $7 \times 1 = 7$ (H) · $8 \times 6 = 48$ (W) · $5 \times 12 = 60$ (O) · $1 \times 4 = 4$ (P) · $9 \times 5 = 45$ (B) · $8 \times 5 = 40$ (C) · $3 \times 1 = 3$ (T) · $9 \times 12 = 108$ (D) · $8 \times 2 = 16$ (V) · $12 \times 11 = 132$ (S)

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

$108 \div 12 = 9$ · $5 \div 1 = 5$ · $8 \div 8 = 1$ · $8 \div 2 = 4$ · $60 \div 10 = 6$ · $144 \div 12 = 12$ · $24 \div 8 = 3$ · $4 \div 2 = 2$ · $30 \div 3 = 10$ · $64 \div 8 = 8$ · $66 \div 6 = 11$