



The Whisper Valley Fireplane Mystery

Grade 5 math · Subtraction, Fractions of a number, Multiplication, Addition · Reading level grades 5-6

Detective: _____ Date: _____

A prototype kid-sized fireplane has crashed in the dense woods of Whisper Valley! Police Chief Joshua Dax Zeno is on the scene, but someone took the plane's high-tech water core before the rescue crew arrived. It is up to Chief Zeno and his team to find 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 Pilot is _____

Possible suspects

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

NAME	FLIGHT GEAR	BACKUP TOOL	FLIGHT SETUP	PILOT HAIR	RESCUE OBSTACLE
Nora Frost	scout drone controller	night-vision visor	left-handed pilot	sandy blonde messy hair	allergic to pine sap
Ruby Cross	turbo rotor copter	super-grip grapple	right-handed pilot	bright neon orange hair	allergic to pine sap
Jace Cooper	scout drone controller	titanium crowbar	left-handed pilot	sandy blonde messy hair	sneezes from campfire smoke
Owen Sterling	turbo rotor copter	super-grip grapple	right-handed pilot	sandy blonde messy hair	allergic to pine sap
Leo Brooks	turbo rotor copter	titanium crowbar	right-handed pilot	jet black spiky hair	scared of forest owls
Alex Mercer	turbo rotor copter	mega foam blaster	right-handed pilot	jet black spiky hair	scared of forest owls
Mia Fletcher	scout drone controller	thermal radar kit	left-handed pilot	bright neon orange hair	scared of forest owls
Ivy Mercer	heavy water bomber	titanium crowbar	right-handed pilot	bright neon orange hair	allergic to pine sap
Ella Thorne	smokebuster flight jet	night-vision visor	right-handed pilot	bright neon orange hair	allergic to pine sap
Gavin Reed	heavy water bomber	super-grip grapple	left-handed pilot	bright neon orange hair	scared of forest owls
Silas Crane	turbo rotor copter	titanium crowbar	right-handed pilot	jet black spiky hair	allergic to pine sap
Cole Ryder	glide rescue wing	mega foam blaster	right-handed pilot	bright neon orange hair	allergic to pine sap
Chase Wilder	turbo rotor copter	thermal radar kit	right-handed pilot	jet black spiky hair	sneezes from campfire smoke
Cody Miller	turbo rotor copter	mega foam blaster	right-handed pilot	bright neon orange hair	allergic to pine sap
Luke Holloway	smokebuster flight jet	thermal radar kit	left-handed pilot	jet black spiky hair	scared of forest owls
Eli Harrison	heavy water bomber	night-vision visor	right-handed pilot	jet black spiky hair	scared of forest owls
Emma Vance	heavy water bomber	thermal radar kit	right-handed pilot	jet black spiky hair	scared of forest owls
Maya Sterling	scout drone controller	titanium crowbar	left-handed pilot	bright neon orange hair	allergic to pine sap
Liam Cross	smokebuster flight jet	thermal radar kit	right-handed pilot	jet black spiky hair	allergic to pine sap
Ryan Thorne	turbo rotor copter	mega foam blaster	right-handed pilot	bright neon orange hair	sneezes from campfire smoke
Wyatt Stone	smokebuster flight jet	super-grip grapple	right-handed pilot	jet black spiky hair	scared of forest owls

CLUE 1

Chief Joshua Dax Zeno inspects the emergency locker. We started with sixty flares but some were stolen. Subtracting the remaining flares reveals how many the culprit took to light their escape route.

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

Diagram illustrating the distribution of 1000 nodes across 1000 buckets. The buckets are arranged in three rows. The first row has 10 buckets, with the 10th bucket containing 8873 nodes. The second row has 14 buckets, with the 14th bucket containing 8873 nodes. The third row has 7 buckets. The total number of nodes is 1000.

$$12850 - 3977 = \boxed{} \rightarrow \boxed{\mathbf{T}}$$

$$7038 - 3069 = \boxed{} \rightarrow \boxed{\mathbf{D}}$$

$$10186 - 2675 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$10391 - 3360 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$7606 - 2469 = \boxed{} \rightarrow \boxed{0}$$

$$8780 - 4500 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$9145 - 583 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$6806 - 3416 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$10433 - 2848 = \boxed{} \rightarrow \boxed{\mathbf{U}}$$

$$6248 - 1760 = \boxed{} \rightarrow \boxed{\text{H}}$$

$7623 - 3195 = \boxed{} \rightarrow \boxed{\text{R}}$

$9649 - 4418 = \boxed{} \rightarrow \boxed{\text{S}}$

$$10247 - 4409 = \boxed{} \rightarrow \boxed{\text{N}}$$

$10278 - 4378 = \boxed{} \rightarrow \boxed{\text{A}}$

$10317 - 4115 = \boxed{} \rightarrow \boxed{\text{G}}$

$$7415 - 4897 = \boxed{} \rightarrow \boxed{\text{E}}$$

Scratch space:

CLUE 2
Fractions of a number

The fireplane crash broke the cockpit control panels. Chief Zeno notices that only a small fraction of the forty-eight backup indicator lights are still flashing. We must calculate this fraction to reboot the radar.

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

T																	
22	12	18	18	9	10	39	6	18	6	27	39	36	18	30	39	9	
											T						
35	27	20	30	36	4	24	32	21	16	12	22	12	39	36	26		
20	36	27	24														

$1/4 \text{ of } 88 = \square \rightarrow \boxed{\text{T}}$

$3/6 \text{ of } 70 = \square \rightarrow \boxed{\text{F}}$

$4/6 \text{ of } 30 = \square \rightarrow \boxed{\text{O}}$

$4/8 \text{ of } 52 = \square \rightarrow \boxed{\text{D}}$

$2/8 \text{ of } 108 = \square \rightarrow \boxed{\text{L}}$

$8/10 \text{ of } 20 = \square \rightarrow \boxed{\text{G}}$

$6/10 \text{ of } 35 = \square \rightarrow \boxed{\text{I}}$

$3/4 \text{ of } 52 = \square \rightarrow \boxed{\text{A}}$

$2/5 \text{ of } 10 = \square \rightarrow \boxed{\text{B}}$

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

$2/10 \text{ of } 90 = \square \rightarrow \boxed{\text{E}}$

$1/3 \text{ of } 90 = \square \rightarrow \boxed{\text{W}}$

$2/10 \text{ of } 60 = \square \rightarrow \boxed{\text{H}}$

$4/6 \text{ of } 48 = \square \rightarrow \boxed{\text{R}}$

$4/6 \text{ of } 36 = \square \rightarrow \boxed{\text{Y}}$

$2/6 \text{ of } 27 = \square \rightarrow \boxed{\text{S}}$

$1/3 \text{ of } 108 = \square \rightarrow \boxed{\text{N}}$

$2/3 \text{ of } 9 = \square \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 3

Multiplication facts (1-12)

A parachute drop landed rescue supplies in a grid on the forest floor. Chief Zeno counts the rows and columns. We multiply these groups together to find the total number of walkie-talkies available.

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

A					A													
8	28	144	14	35	8	22	22	14	84	60	33	144	5	96	7	48	96	84
						A			A									
2	12	40	14	144	8	2	32	8	144	48	96	28	40	35				

$4 \times 2 = \square \rightarrow \text{A}$

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

$2 \times 6 = \square \rightarrow \text{I}$

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

$1 \times 2 = \square \rightarrow \text{P}$

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

$11 \times 2 = \square \rightarrow \text{L}$

$2 \times 7 = \square \rightarrow \text{E}$

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

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

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

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

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

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

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

$12 \times 7 = \square \rightarrow \text{R}$

$6 \times 10 = \square \rightarrow \text{G}$

Scratch space:

CLUE 4 Addition

We need to check the remaining fuel levels in both wing tanks. Adding the gallons from the left wing to the gallons in the right wing gives Chief Zeno the total range of the escape plane.

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

O 2246 6389 3267 5436 5094 5334	8499 2488 6389 3267 5436 4336 8499	3315 5334 6389 5334
4907 3267 2892 5094 5655 2488	O 2246 5436 2488 5655 5334 5689 6389 3267 5436 4907 5655	

$1489 + 757 = \square \rightarrow \boxed{\text{O}}$

$1436 + 1456 = \square \rightarrow \boxed{\text{U}}$

$3451 + 1883 = \square \rightarrow \boxed{\text{E}}$

$961 + 1527 = \square \rightarrow \boxed{\text{T}}$

$4405 + 1984 = \square \rightarrow \boxed{\text{R}}$

$3146 + 1948 = \square \rightarrow \boxed{\text{G}}$

$1975 + 1292 = \square \rightarrow \boxed{\text{A}}$

$3425 + 2264 = \square \rightarrow \boxed{\text{B}}$

$2228 + 1087 = \square \rightarrow \boxed{\text{W}}$

$2488 + 3167 = \square \rightarrow \boxed{\text{H}}$

$4257 + 4242 = \square \rightarrow \boxed{\text{S}}$

$2758 + 2678 = \square \rightarrow \boxed{\text{N}}$

$2899 + 1437 = \square \rightarrow \boxed{\text{D}}$

$2901 + 2006 = \square \rightarrow \boxed{\text{C}}$

Scratch space:

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

The copilot finds a torn flight manual with sixty-four pages in total. The chief determines that a fraction of the manual contains the secret bypass codes. Calculating this fraction unlocks the culprit's profile.

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:

$3/6 \text{ of } 22 = \boxed{}$

$1/10 \text{ of } 10 = \boxed{}$

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

$4/10 \text{ of } 15 = \boxed{}$

$8/10 \text{ of } 5 = \boxed{}$

$1/3 \text{ of } 27 = \boxed{}$

$2/3 \text{ of } 15 = \boxed{}$

$1/4 \text{ of } 12 = \boxed{}$

$3/6 \text{ of } 4 = \boxed{}$

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

$2/3 \text{ of } 18 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain escaped on a smokebuster flight jet, then activated a night-vision visor.
2. The villain zipped away on a glide rescue wing, then activated a night-vision visor.
3. The villain ran while operating a scout drone, then scanned the woods with a thermal radar kit.
4. The villain took off in a turbo rotor copter, then scaled the cliff using a super-grip grapple.
5. The villain took off in a turbo rotor copter, then cleared the path with a mega foam blaster.
6. The villain fled in a heavy water bomber, then scanned the woods with a thermal radar kit.
7. The villain took off in a turbo rotor copter, then broke open the cockpit with a titanium crowbar.
8. The villain zipped away on a glide rescue wing, then cleared the path with a mega foam blaster.
9. The villain fled in a heavy water bomber, then cleared the path with a mega foam blaster.
10. The villain ran while operating a scout drone, then scaled the cliff using a super-grip grapple.
11. The villain fled in a heavy water bomber, then broke open the cockpit with a titanium crowbar.
12. The villain fled in a heavy water bomber, then scaled the cliff using a super-grip grapple.

Answer Key

The Whisper Valley Fireplane Mystery

Culprit: Cody Miller

turbo rotor copter · mega foam blaster · right-handed pilot · bright neon orange hair · allergic to pine sap

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Subtraction): "THE SUSPECT DOES NOT HAVE A SUPER GRIP GRAPPLE"

12850 - 3977 = 8873 (T) · 7038 - 3069 = 3969 (D) · 10186 - 2675 = 7511 (V) · 10391 - 3360 = 7031 (C) · 7606 - 2469 = 5137 (O) · 8780 - 4500 = 4280 (I) · 9145 - 583 = 8562 (L) · 6806 - 3416 = 3390 (P) · 10433 - 2848 = 7585 (U) · 6248 - 1760 = 4488 (H) · 7623 - 3195 = 4428 (R) · 9649 - 4418 = 5231 (S) · 10247 - 4409 = 5838 (N) · 10278 - 4378 = 5900 (A) · 10317 - 4115 = 6202 (G) · 7415 - 4897 = 2518 (E)

Clue 2 (Fractions of a number): "THE ESCAPE PLANE WAS FLOWN BY RIGHT HAND ONLY"

1/4 of 88 = 22 (T) · 3/6 of 70 = 35 (F) · 4/6 of 30 = 20 (O) · 4/8 of 52 = 26 (D) · 2/8 of 108 = 27 (L) · 8/10 of 20 = 16 (G) · 6/10 of 35 = 21 (I) · 3/4 of 52 = 39 (A) · 2/5 of 10 = 4 (B) · 2/5 of 25 = 10 (C) · 2/10 of 90 = 18 (E) · 1/3 of 90 = 30 (W) · 2/10 of 60 = 12 (H) · 4/6 of 48 = 32 (R) · 4/6 of 36 = 24 (Y) · 2/6 of 27 = 9 (S) · 1/3 of 108 = 36 (N) · 2/3 of 9 = 6 (P)

Clue 3 (Multiplication facts (1-12)): "A USED ALLERGY SHOT FOR PINE SAP WAS FOUND"

4 × 2 = 8 (A) · 8 × 6 = 48 (F) · 2 × 6 = 12 (I) · 7 × 5 = 35 (D) · 1 × 2 = 2 (P) · 8 × 12 = 96 (O) · 11 × 2 = 22 (L) · 2 × 7 = 14 (E) · 3 × 11 = 33 (Y) · 12 × 12 = 144 (S) · 5 × 8 = 40 (N) · 7 × 4 = 28 (U) · 4 × 8 = 32 (W) · 7 × 1 = 7 (T) · 1 × 5 = 5 (H) · 12 × 7 = 84 (R) · 6 × 10 = 60 (G)

Clue 4 (Addition): "ORANGE STRANDS WERE CAUGHT ON THE BRANCH"

1489 + 757 = 2246 (O) · 1436 + 1456 = 2892 (U) · 3451 + 1883 = 5334 (E) · 961 + 1527 = 2488 (T) · 4405 + 1984 = 6389 (R) · 3146 + 1948 = 5094 (G) · 1975 + 1292 = 3267 (A) · 3425 + 2264 = 5689 (B) · 2228 + 1087 = 3315 (W) · 2488 + 3167 = 5655 (H) · 4257 + 4242 = 8499 (S) · 2758 + 2678 = 5436 (N) · 2899 + 1437 = 4336 (D) · 2901 + 2006 = 4907 (C)

Clue 5 (Fractions of a number): surviving statement is box 5 → Cody Miller

3/6 of 22 = 11 · 1/10 of 10 = 1 · 1/6 of 48 = 8 · 4/10 of 15 = 6 · 8/10 of 5 = 4 · 1/3 of 27 = 9 · 2/3 of 15 = 10 · 1/4 of 12 = 3 · 3/6 of 4 = 2 · 5/10 of 14 = 7 · 2/3 of 18 = 12