



The Solar Sail Sabotage

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

Detective: _____ Date: _____

A thief has sneaked aboard the Saniana! Captain Joshua Dax Zeno discovered his prized Kid Cruiser, a custom hover-board that can surf stellar winds, has been stolen from the cargo bay. We must track down the rogue space-pirate before they escape the sector!

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 space-pirate 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	SHIP GADGET	CONTROL STYLE	VISOR GLARE COLOR	DEFENSIVE COUNTER
Cassian Nebula	stellar-net	plasma-torch	lefty steer controls	supernova orange glow	ice blaster freeze
Nova Vane	gravity-boot	laser-grapple	lefty steer controls	supernova orange glow	emp scramble pulse
Kaelen Void	plasma-cutter	stealth-cloak	lefty steer controls	cosmic green glow	decoy beacon trap
Atlas Orbit	plasma-cutter	sonic-cannon	lefty steer controls	nebula purple glow	decoy beacon trap
Vesper Ray	gravity-boot	plasma-torch	righty steer controls	supernova orange glow	emp scramble pulse
Skye Nebula	electro-hook	plasma-torch	righty steer controls	nebula purple glow	emp scramble pulse
Sable Eclipse	electro-hook	sonic-cannon	lefty steer controls	nebula purple glow	decoy beacon trap
Cyrus Flare	electro-hook	plasma-torch	lefty steer controls	nebula purple glow	decoy beacon trap
Juno Jet	electro-hook	hyper-shield	lefty steer controls	nebula purple glow	decoy beacon trap
Aero Vance	gravity-boot	laser-grapple	lefty steer controls	nebula purple glow	ice blaster freeze
Orion Drake	stellar-net	plasma-torch	righty steer controls	nebula purple glow	emp scramble pulse
Jax Starrunner	gravity-boot	plasma-torch	righty steer controls	nebula purple glow	decoy beacon trap
Lyra Pulsar	nano-hacker	laser-grapple	lefty steer controls	supernova orange glow	ice blaster freeze
Leo Horizon	electro-hook	stealth-cloak	lefty steer controls	supernova orange glow	decoy beacon trap
Rider Comet	stellar-net	hyper-shield	righty steer controls	nebula purple glow	decoy beacon trap
Zara Zenith	gravity-boot	plasma-torch	righty steer controls	cosmic green glow	emp scramble pulse
Draco Burn	nano-hacker	plasma-torch	righty steer controls	supernova orange glow	ice blaster freeze
Zephyr Solar	gravity-boot	plasma-torch	lefty steer controls	nebula purple glow	decoy beacon trap
Rhea Warp	gravity-boot	stealth-cloak	lefty steer controls	nebula purple glow	decoy beacon trap
Talon Frost	plasma-cutter	sonic-cannon	lefty steer controls	supernova orange glow	decoy beacon trap
Dax Orion	nano-hacker	laser-grapple	righty steer controls	cosmic green glow	decoy beacon trap

CLUE 1
Subtraction

Captain Zeno needs to count the remaining ship parts in the cargo bay. Subtracting the missing boxes from the total reveals a clue about the thief's escape gear.

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

T 8317	2869	3720	T 8317	2869	5020	3720	7045	4621	5849	3720	2485	3418	5849	T 8317	5747	2485	3720
T 8317	2869	3720	2485	5849	3418	5020	2321	2321	1391	3418	3418	5849	3418				

$12119 - 3802 = \square \rightarrow \text{T}$

$5780 - 33 = \square \rightarrow \text{U}$

$3215 - 894 = \square \rightarrow \text{C}$

$7970 - 2950 = \square \rightarrow \text{I}$

$7532 - 3812 = \square \rightarrow \text{E}$

$7717 - 1868 = \square \rightarrow \text{O}$

$5794 - 1173 = \square \rightarrow \text{D}$

$4221 - 2830 = \square \rightarrow \text{A}$

$3932 - 1063 = \square \rightarrow \text{H}$

$6328 - 2910 = \square \rightarrow \text{N}$

$7055 - 10 = \square \rightarrow \text{F}$

$2900 - 415 = \square \rightarrow \text{S}$

Scratch space:

CLUE 2 Addition

The Saniana's deck officers tally up the total crew members reporting to duty stations. Adding the stargate logs gives us a clue about how the thief controls their ship.

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

L																		
2315	8003	4327	6502	2553	7621	6502	8003	8003	7753	3867	8732	7753	3148	7621	6797	8003	7753	8003
																		L
4327	5607	5259	3974	4926	5607	3974	6502	4057	8003	6797	4057	8003	8003	2315				

$1552 + 763 = \square \rightarrow \text{L}$

$2546 + 1781 = \square \rightarrow \text{F}$

$1254 + 2613 = \square \rightarrow \text{M}$

$1891 + 3035 = \square \rightarrow \text{D}$

$1156 + 1397 = \square \rightarrow \text{Y}$

$1874 + 2100 = \square \rightarrow \text{N}$

$2785 + 2822 = \square \rightarrow \text{O}$

$3072 + 3430 = \square \rightarrow \text{T}$

$3636 + 1623 = \square \rightarrow \text{U}$

$3449 + 4304 = \square \rightarrow \text{R}$

$1487 + 2570 = \square \rightarrow \text{H}$

$2863 + 4758 = \square \rightarrow \text{S}$

$2041 + 1107 = \square \rightarrow \text{K}$

$2685 + 5318 = \square \rightarrow \text{E}$

$5319 + 3413 = \square \rightarrow \text{A}$

$2491 + 4306 = \square \rightarrow \text{W}$

Scratch space:

CLUE 3
Multiplication facts (1-12)

Our engine coils are arranged in equal rows on the power grid. Multiplying the rows by the coils reveals the energy frequency of the thief's visor glare.

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

D																			
81	20	1	132	8	30	20	50	1	132	10	9	15	50	77	45	144	5	80	80
28	132	132	80	9	54	20	9	54	5	20	28								

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

$10 \times 1 = \square \rightarrow \boxed{\text{N}}$

$1 \times 1 = \square \rightarrow \boxed{\text{C}}$

$10 \times 2 = \square \rightarrow \boxed{\text{E}}$

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

$5 \times 10 = \square \rightarrow \boxed{\text{A}}$

$6 \times 9 = \square \rightarrow \boxed{\text{H}}$

$9 \times 1 = \square \rightarrow \boxed{\text{T}}$

$8 \times 1 = \square \rightarrow \boxed{\text{Y}}$

$4 \times 7 = \square \rightarrow \boxed{\text{F}}$

$11 \times 7 = \square \rightarrow \boxed{\text{P}}$

$10 \times 8 = \square \rightarrow \boxed{\text{L}}$

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

$10 \times 3 = \square \rightarrow \boxed{\text{B}}$

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

$12 \times 12 = \square \rightarrow \boxed{\text{W}}$

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

Scratch space:

Fractions of a number

We scan a fraction of the nearby star sector to trace the thief's energy trail. Finding a fractional share of the beacon signals reveals their tactical weakness.

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

A number line from 0 to 100 with two rows of boxes. The first row has boxes at 0, 25, 50, 75, and 100. The second row has boxes at 0, 25, 50, 75, and 100. The box at 0 in the first row is highlighted orange and contains the letter 'N'. The box at 50 in the second row is highlighted orange and contains the letter 'N'.

4/6 of 48 = → **N**

3/6 of 78 = → **G**

$\frac{1}{4}$ of 56 = $\rightarrow$ **U**

$\frac{3}{4}$ of 40 = $\rightarrow$ **R**

$2/4$ of 24 = $\rightarrow$ **T**

6/10 of 45 = → **H**

$$5/10 \text{ of } 52 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$1/10 \text{ of } 190 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

4/8 of 50 = → **E**

4/10 of 95 = → **L**

$$\frac{1}{2} \text{ of } 48 = \boxed{} \rightarrow \boxed{\text{F}}$$

$3/6$ of $46 = \boxed{} \rightarrow \boxed{\text{A}}$

$2/8$ of $40 = \square \rightarrow \mathbf{B}$

$2/4$ of 26 = $\rightarrow$ **D**

$$2/4 \text{ of } 72 = \boxed{} \rightarrow \boxed{\text{P}}$$

5/10 of 68 = →

$\frac{1}{2}$ of 12 = $\rightarrow$ **S**

Scratch space:

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

The crew divides a batch of plasma cells to power up the long-range tracking dish. Taking a fraction of this fuel supply pinpoints the thief's exact escape route.

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:

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

$1/8 \text{ of } 88 = \boxed{}$

$1/4 \text{ of } 20 = \boxed{}$

$2/10 \text{ of } 20 = \boxed{}$

$7/8 \text{ of } 8 = \boxed{}$

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

$1/6 \text{ of } 54 = \boxed{}$

$4/10 \text{ of } 25 = \boxed{}$

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

$1/6 \text{ of } 18 = \boxed{}$

$2/4 \text{ of } 16 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain disables the hangar door lock, then escapes into the dark asteroid belt.
2. The villain scrambles the navigation radar, then hides behind a frozen space station.
3. The villain swipes the ship keycodes, then speeds away on the stolen cruiser.
4. The villain hacks the deck security cameras, then hides behind a frozen space station.
5. The villain swipes the ship keycodes, then escapes into the dark asteroid belt.
6. The villain scrambles the navigation radar, then escapes into the dark asteroid belt.
7. The villain hacks the deck security cameras, then escapes into the dark asteroid belt.
8. The villain hacks the deck security cameras, then zips past the planetary defense grid.
9. The villain scrambles the navigation radar, then dives into the rings of the gas giant.
10. The villain cuts the power to the backup sails, then zips past the planetary defense grid.
11. The villain swipes the ship keycodes, then hides behind a frozen space station.
12. The villain scrambles the navigation radar, then zips past the planetary defense grid.

Answer Key

The Solar Sail Sabotage

Culprit: Zephyr Solar

gravity-boot · plasma-torch · lefty steer controls · nebula purple glow · decoy beacon trap

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Subtraction): "THE THIEF DOES NOT USE THE SONIC CANNON"

$12119 - 3802 = 8317$ (T) · $5780 - 33 = 5747$ (U) · $3215 - 894 = 2321$ (C) · $7970 - 2950 = 5020$ (I) · $7532 - 3812 = 3720$ (E) · $7717 - 1868 = 5849$ (O) · $5794 - 1173 = 4621$ (D) · $4221 - 2830 = 1391$ (A) · $3932 - 1063 = 2869$ (H) · $6328 - 2910 = 3418$ (N) · $7055 - 10 = 7045$ (F) · $2900 - 415 = 2485$ (S)

Clue 2 (Addition): "LEFTY STEER MARKS WERE FOUND ON THE WHEEL"

$1552 + 763 = 2315$ (L) · $2546 + 1781 = 4327$ (F) · $1254 + 2613 = 3867$ (M) · $1891 + 3035 = 4926$ (D) · $1156 + 1397 = 2553$ (Y) · $1874 + 2100 = 3974$ (N) · $2785 + 2822 = 5607$ (O) · $3072 + 3430 = 6502$ (T) · $3636 + 1623 = 5259$ (U) · $3449 + 4304 = 7753$ (R) · $1487 + 2570 = 4057$ (H) · $2863 + 4758 = 7621$ (S) · $2041 + 1107 = 3148$ (K) · $2685 + 5318 = 8003$ (E) · $5319 + 3413 = 8732$ (A) · $2491 + 4306 = 6797$ (W)

Clue 3 (Multiplication facts (1-12)): "DECOY BEACON TRAPS WILL FOOL THE THIEF"

$9 \times 9 = 81$ (D) · $10 \times 1 = 10$ (N) · $1 \times 1 = 1$ (C) · $10 \times 2 = 20$ (E) · $9 \times 5 = 45$ (S) · $5 \times 10 = 50$ (A) · $6 \times 9 = 54$ (H) · $9 \times 1 = 9$ (T) · $8 \times 1 = 8$ (Y) · $4 \times 7 = 28$ (F) · $11 \times 7 = 77$ (P) · $10 \times 8 = 80$ (L) · $12 \times 11 = 132$ (O) · $10 \times 3 = 30$ (B) · $5 \times 1 = 5$ (I) · $12 \times 12 = 144$ (W) · $3 \times 5 = 15$ (R)

Clue 4 (Fractions of a number): "NEBULA PURPLE GLOW DUST WAS LEFT BEHIND"

$\frac{4}{6}$ of 48 = 32 (N) · $\frac{3}{6}$ of 78 = 39 (G) · $\frac{1}{4}$ of 56 = 14 (U) · $\frac{3}{4}$ of 40 = 30 (R) · $\frac{2}{4}$ of 24 = 12 (T) · $\frac{6}{10}$ of 45 = 27 (H) · $\frac{5}{10}$ of 52 = 26 (O) · $\frac{1}{10}$ of 190 = 19 (W) · $\frac{4}{8}$ of 50 = 25 (E) · $\frac{4}{10}$ of 95 = 38 (L) · $\frac{1}{2}$ of 48 = 24 (F) · $\frac{3}{6}$ of 46 = 23 (A) · $\frac{2}{8}$ of 40 = 10 (B) · $\frac{2}{4}$ of 26 = 13 (D) · $\frac{2}{4}$ of 72 = 36 (P) · $\frac{5}{10}$ of 68 = 34 (I) · $\frac{1}{2}$ of 12 = 6 (S)

Clue 5 (Fractions of a number): surviving statement is box 2 → Zephyr Solar

$\frac{2}{3}$ of 18 = 12 · $\frac{1}{8}$ of 88 = 11 · $\frac{1}{4}$ of 20 = 5 · $\frac{2}{10}$ of 20 = 4 · $\frac{7}{8}$ of 8 = 7 · $\frac{2}{3}$ of 9 = 6 · $\frac{1}{6}$ of 54 = 9 · $\frac{4}{10}$ of 25 = 10 · $\frac{1}{10}$ of 10 = 1 · $\frac{1}{6}$ of 18 = 3 · $\frac{2}{4}$ of 16 = 8