



The Cosmic Hoops Heist

Grade 9 math · Fractions of a number, Word problems, Multi-step word problems, Two-step equations · Reading level grades 7-9

Detective: _____ Date: _____

Someone hacked the championship trophy pod right before the Star-Block League finals. Clues left across the futuristic orbital court will help us unmask 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 the Galaxy Glitcher is _____

Possible suspects

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

NAME	PRIMARY GEAR	BOOSTER MODULE	DOMINANT HAND	VISOR COLOR	DEFENSE GLITCH
Giannis Block	Astro Whistle	Star Horn	Left Handed	Prism Purple	Heavy Cosmic Dust
Sue Bird	Block Shield	Tail Thruster	Left Handed	Solar Gold	Heavy Cosmic Dust
Nikola Jokic	Turbo Ball	Star Horn	Left Handed	Cyber Cyan	Loud Whistle Sound
Kylian Mbappe	Astro Whistle	Tail Thruster	Left Handed	Solar Gold	Heavy Cosmic Dust
Leo Galaxy	Block Shield	Warp Boots	Left Handed	Prism Purple	Bright Laser Light
Trinity Rodman	Gravity Cleats	Warp Boots	Left Handed	Prism Purple	Loud Whistle Sound
Breanna Stewart	Block Shield	Tail Thruster	Right Handed	Cyber Cyan	Bright Laser Light
James Harden	Gravity Cleats	Pixel Shield	Right Handed	Prism Purple	Heavy Cosmic Dust
Lionel Pulsar	Astro Whistle	Star Horn	Right Handed	Cyber Cyan	Bright Laser Light
Steph Comet	Rocket Jersey	Warp Boots	Right Handed	Cyber Cyan	Loud Whistle Sound
Caitlin Clark	Astro Whistle	Tail Thruster	Left Handed	Solar Gold	Loud Whistle Sound
Sabrina Ionescu	Block Shield	Star Horn	Right Handed	Solar Gold	Loud Whistle Sound
Marta Vieira	Block Shield	Warp Boots	Right Handed	Prism Purple	Loud Whistle Sound
Christine Sinclair	Rocket Jersey	Pixel Shield	Right Handed	Solar Gold	Loud Whistle Sound
Diana Taurasi	Block Shield	Neon Wings	Left Handed	Solar Gold	Heavy Cosmic Dust
LeBron Nova	Gravity Cleats	Pixel Shield	Right Handed	Solar Gold	Heavy Cosmic Dust
Megan Rapinoe	Rocket Jersey	Warp Boots	Left Handed	Solar Gold	Bright Laser Light
Kevin Durant	Block Shield	Star Horn	Left Handed	Cyber Cyan	Heavy Cosmic Dust
Alex Morgan	Block Shield	Warp Boots	Left Handed	Solar Gold	Heavy Cosmic Dust
Aja Wilson	Gravity Cleats	Pixel Shield	Left Handed	Cyber Cyan	Loud Whistle Sound
Sam Kerr	Rocket Jersey	Star Horn	Left Handed	Solar Gold	Heavy Cosmic Dust

Fractions of a number

We analyzed the stadium ticket database to filter out spectating fans, calculating the fraction of registered athletes in attendance.

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

26 52 36 44 38 50 50 29 38 18 31 42 36 30 18 42 26

10 30 36 18 36 42 18 60 38 18 39 30

4/10 of 65 = → **T**

$2/5$ of 110 = $\rightarrow$ **V**

$$2/5 \text{ of } 150 = \boxed{} \rightarrow \boxed{\text{W}}$$

$5/10$ of $62 = \boxed{} \rightarrow \boxed{\text{D}}$

$\frac{1}{5}$ of 180 = $\rightarrow$ **E**

$\frac{1}{3}$ of 150 = $\rightarrow$ **L**

$\frac{1}{2}$ of 78 = $\rightarrow$ **G**

$$\frac{1}{3} \text{ of } 90 = \boxed{} \rightarrow \boxed{\text{S}}$$

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

$$\frac{1}{6} \text{ of } 174 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

4/10 of 105 = →

$$2/4 \text{ of } 104 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$\frac{1}{5} \text{ of } 50 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$2/8 \text{ of } 152 = \boxed{} \rightarrow \boxed{\text{I}}$$

Scratch space:

CLUE 2

Word problems

The arena security sensors logged ball possessions and speed metrics during the blackout, providing a key stat.

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

A witness saw the villain was L D D .

119 103 63 88 94 15 83 103

There were 156 gravity blocks. 37 were used up. How many gravity blocks are left?

Answer: → L

There were 116 cosmic soccer balls. 28 were used up. How many cosmic soccer balls are left?

Answer: → T

Coach Nebula lined up 3 rows of 5 star crystals. How many star crystals in all?

Answer: → A

There were 119 rocket jerseys. 16 were used up. How many rocket jerseys are left?

Answer: → E

Coach Nebula found 63 astro hoops yesterday and 20 more today. How many astro hoops in all?

Answer: → N

There were 129 cosmic soccer balls. 35 were used up. How many cosmic soccer balls are left?

Answer: → H

There were 100 astro hoops. 37 were used up. How many astro hoops are left?

Answer: → F

Scratch space:

CLUE 3

Multi-step word problems

Reviewing the equipment locker logs required multi-step calculations to track energy cell usages across three rounds.

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

Someone scared the villain off with

H							S	M	I		D	U	S	T	.
74	34	54	10	53	23	49				23					

Coach Nebula collected 45 astro hoops in the morning and 325 astro hoops in the afternoon, then split them equally among 5 Starlight Rovers. How many astro hoops did each get?

Answer: → **H**

Coach Nebula earned 5 star crystals in each of 6 rounds, plus 21 bonus star crystals. Then 2 star crystals were lost. How many star crystals are left?

Answer: → **O**

Coach Nebula earned 4 rocket jerseys in each of 6 rounds, plus 31 bonus rocket jerseys. Then 1 rocket jerseys were lost. How many rocket jerseys are left?

Answer: → **A**

There were 90 gravity blocks in all. 20 gravity blocks were set aside. The rest were shared equally among 7 Starlight Rovers. How many gravity blocks did each get?

Answer: → **V**

Coach Nebula collected 70 cosmic soccer balls in the morning and 22 cosmic soccer balls in the afternoon, then split them equally among 4 Starlight Rovers. How many cosmic soccer balls did each get?

Answer: → **C**

Coach Nebula filled 7 boxes with 7 gravity blocks each, then found 4 more gravity blocks. How many gravity blocks are there in all?

Answer: → **Y**

There were 148 star crystals in all. 2 Starlight Rovers used 40 star crystals each. The other 2 Starlight Rovers shared the rest equally. How many star crystals did each of the other Starlight Rovers get?

Answer: → **E**

Scratch space:

CLUE 4

Two-step equations

To decode the encrypted telemetry lock on the trophy pod, we set up and solved an equation using sensor readings.

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

A										A							
2	18	22	17	4	11	13	18	20	11	2	21	4	20	11	15		
									A		A						
16	22	18	20	21	18	19	21	2	12	8	2	18	7	20	3	17	15

$2x + 2 = 6, x = \square \rightarrow \boxed{A}$

$5x + 6 = 61, x = \square \rightarrow \boxed{L}$

$5x + 10 = 50, x = \square \rightarrow \boxed{W}$

$9x + 11 = 119, x = \square \rightarrow \boxed{P}$

$9x + 1 = 154, x = \square \rightarrow \boxed{N}$

$4x + 9 = 61, x = \square \rightarrow \boxed{E}$

$7x + 4 = 32, x = \square \rightarrow \boxed{G}$

$9x + 2 = 146, x = \square \rightarrow \boxed{V}$

$3x + 6 = 63, x = \square \rightarrow \boxed{T}$

$2x + 8 = 14, x = \square \rightarrow \boxed{U}$

$7x + 8 = 148, x = \square \rightarrow \boxed{O}$

$2x + 1 = 15, x = \square \rightarrow \boxed{F}$

$7x + 3 = 157, x = \square \rightarrow \boxed{I}$

$4x + 9 = 81, x = \square \rightarrow \boxed{S}$

$8x + 3 = 123, x = \square \rightarrow \boxed{D}$

$6x + 3 = 129, x = \square \rightarrow \boxed{R}$

Scratch space:

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

Finally, evaluating fractional stadium power grid drains narrows the suspect list down to the true culprit.

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:

$1/6 \text{ of } 24 = \boxed{}$

$1/8 \text{ of } 64 = \boxed{}$

$3/4 \text{ of } 8 = \boxed{}$

$3/6 \text{ of } 20 = \boxed{}$

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

$1/6 \text{ of } 72 = \boxed{}$

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

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

$1/10 \text{ of } 30 = \boxed{}$

$1/2 \text{ of } 14 = \boxed{}$

$5/6 \text{ of } 6 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain charged up a rocket jersey, then deployed neon wings.
2. The villain activated gravity cleats, then projected a pixel shield.
3. The villain charged up a rocket jersey, then projected a pixel shield.
4. The villain blew an astro whistle, then fired a tail thruster.
5. The villain blew an astro whistle, then deployed neon wings.
6. The villain raised a block shield, then clicked warp boots.
7. The villain raised a block shield, then deployed neon wings.
8. The villain raised a block shield, then fired a tail thruster.
9. The villain charged up a rocket jersey, then lit up a star horn.
10. The villain dribbled a turbo ball, then projected a pixel shield.
11. The villain charged up a rocket jersey, then clicked warp boots.
12. The villain dribbled a turbo ball, then clicked warp boots.

Answer Key

The Cosmic Hoops Heist

Culprit: Sam Kerr

Rocket Jersey · Star Horn · Left Handed · Solar Gold · Heavy Cosmic Dust

Trail: Start 21 → Clue 1 20 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE NEON WINGS"

$4/10$ of 65 = 26 (T) · $2/5$ of 110 = 44 (V) · $2/5$ of 150 = 60 (W) · $5/10$ of 62 = 31 (D) · $1/5$ of 180 = 36 (E) · $1/3$ of 150 = 50 (L) · $1/2$ of 78 = 39 (G) · $1/3$ of 90 = 30 (S) · $3/8$ of 48 = 18 (N) · $1/6$ of 174 = 29 (A) · $4/10$ of 105 = 42 (O) · $2/4$ of 104 = 52 (H) · $1/5$ of 50 = 10 (U) · $2/8$ of 152 = 38 (I)

Clue 2 (Word problems): "LEFT HANDED"

There were 156 gravity blocks. 37 were used up. How many gravity blocks are left? = 119 (L) · There were 116 cosmic soccer balls. 28 were used up. How many cosmic soccer balls are left? = 88 (T) · Coach Nebula lined up 3 rows of 5 star crystals. How many star crystals in all? = 15 (A) · There were 119 rocket jerseys. 16 were used up. How many rocket jerseys are left? = 103 (E) · Coach Nebula found 63 astro hoops yesterday and 20 more today. How many astro hoops in all? = 83 (N) · There were 129 cosmic soccer balls. 35 were used up. How many cosmic soccer balls are left? = 94 (H) · There were 100 astro hoops. 37 were used up. How many astro hoops are left? = 63 (F)

Clue 3 (Multi-step word problems): "HEAVY COSMIC DUST"

Coach Nebula collected 45 astro hoops in the morning and 325 astro hoops in the afternoon, then split them equally among 5 Starlight Rovers. How many astro hoops did each get? = 74 (H) · Coach Nebula earned 5 star crystals in each of 6 rounds, plus 21 bonus star crystals. Then 2 star crystals were lost. How many star crystals are left? = 49 (O) · Coach Nebula earned 4 rocket jerseys in each of 6 rounds, plus 31 bonus rocket jerseys. Then 1 rocket jerseys were lost. How many rocket jerseys are left? = 54 (A) · There were 90 gravity blocks in all. 20 gravity blocks were set aside. The rest were shared equally among 7 Starlight Rovers. How many gravity blocks did each get? = 10 (V) · Coach Nebula collected 70 cosmic soccer balls in the morning and 22 cosmic soccer balls in the afternoon, then split them equally among 4 Starlight Rovers. How many cosmic soccer balls did each get? = 23 (C) · Coach Nebula filled 7 boxes with 7 gravity blocks each, then found 4 more gravity blocks. How many gravity blocks are there in all? = 53 (Y) · There were 148 star crystals in all. 2 Starlight Rovers used 40 star crystals each. The other 2 Starlight Rovers shared the rest equally. How many star crystals did each of the other Starlight Rovers get? = 34 (E)

Clue 4 (Two-step equations): "A SINGLE SOLAR GOLD VISOR STRAP WAS FOUND"

$2x + 2 = 6$, $x = 2$ (A) · $5x + 6 = 61$, $x = 11$ (L) · $5x + 10 = 50$, $x = 8$ (W) · $9x + 11 = 119$, $x = 12$ (P) · $9x + 1 = 154$, $x = 17$ (N) · $4x + 9 = 61$, $x = 13$ (E) · $7x + 4 = 32$, $x = 4$ (G) · $9x + 2 = 146$, $x = 16$ (V) · $3x + 6 = 63$, $x = 19$ (T) · $2x + 8 = 14$, $x = 3$ (U) · $7x + 8 = 148$, $x = 20$ (O) · $2x + 1 = 15$, $x = 7$ (F) · $7x + 3 = 157$, $x = 22$ (I) · $4x + 9 = 81$, $x = 18$ (S) · $8x + 3 = 123$, $x = 15$ (D) · $6x + 3 = 129$, $x = 21$ (R)

Clue 5 (Fractions of a number): surviving statement is box 9 → Sam Kerr

$1/6$ of 24 = 4 · $1/8$ of 64 = 8 · $3/4$ of 8 = 6 · $3/6$ of 20 = 10 · $2/6$ of 6 = 2 · $1/6$ of 72 = 12 · $3/6$ of 22 = 11 · $1/6$ of 6 = 1 · $1/10$ of 30 = 3 · $1/2$ of 14 = 7 · $5/6$ of 6 = 5