



The Mystery of the Sunken Sun Stone

Grade 6 math · Fractions of a number, Rounding, Percentages, Exponents · Reading level grades 5-6

Detective: _____ Date: _____

Someone stole the Golden Sun Stone from Professor Drake's campsite in the middle of Serpent Island. Solve the clues to reveal the culprit before the escape boat sails away.

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 Scoundrel is _____

Possible suspects

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

NAME	EXPEDITION TOOL	EXPLORER GEAR	CAMP HABIT	HAT STYLE	JUNGLE FEAR
Jax Mercer	Machete	Snake Boots	Taps Right Boot	Safari Cap	Mosquito Swarms
Koa Rivers	Compass Watch	Brass Telescope	Taps Right Boot	Pith Helmet	Quick Sand
Felix Vance	Grappling Hook	Leather Canteen	Taps Right Boot	Felt Fedora	Mosquito Swarms
Aria Finch	Signal Flare	Climbing Harness	Taps Left Boot	Felt Fedora	Mosquito Swarms
Maya Cruz	Signal Flare	Leather Canteen	Taps Right Boot	Safari Cap	Mosquito Swarms
Gavin Stone	Compass Watch	Brass Telescope	Taps Right Boot	Safari Cap	Mosquito Swarms
Mateo Silva	Signal Flare	Snake Boots	Taps Right Boot	Felt Fedora	Quick Sand
Caleb Thorne	Machete	Map Pouch	Taps Right Boot	Pith Helmet	Mosquito Swarms
Jasper Drake	Torch Flashlight	Map Pouch	Taps Right Boot	Felt Fedora	Mosquito Swarms
Ivy Holbrook	Torch Flashlight	Snake Boots	Taps Left Boot	Felt Fedora	Mosquito Swarms
Chloe Bennett	Torch Flashlight	Leather Canteen	Taps Right Boot	Felt Fedora	Mosquito Swarms
Wyatt Steele	Compass Watch	Leather Canteen	Taps Left Boot	Pith Helmet	Mud Pits
Isla Barrett	Machete	Leather Canteen	Taps Left Boot	Pith Helmet	Mosquito Swarms
Leo Vance	Compass Watch	Brass Telescope	Taps Left Boot	Felt Fedora	Quick Sand
Elena Frost	Compass Watch	Brass Telescope	Taps Left Boot	Pith Helmet	Mud Pits
Nora Wilde	Machete	Climbing Harness	Taps Right Boot	Felt Fedora	Mosquito Swarms
Talia Reed	Grappling Hook	Snake Boots	Taps Right Boot	Pith Helmet	Mud Pits
Owen Hayes	Compass Watch	Brass Telescope	Taps Left Boot	Pith Helmet	Mosquito Swarms
Ethan Cross	Compass Watch	Climbing Harness	Taps Right Boot	Felt Fedora	Mosquito Swarms
Luna Marsh	Torch Flashlight	Leather Canteen	Taps Left Boot	Safari Cap	Mud Pits
Indiana Rex	Machete	Climbing Harness	Taps Left Boot	Felt Fedora	Mosquito Swarms

CLUE 1
Fractions of a number

We surveyed the expedition supply crates to find out what portion of the food packs were tampered with.

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

T																T
24	32	18	3	9	29	29	28	9	37	4	27	18	20	37	27	24

22	28	10	10	19	28	36	28	21	21	27	14	22	32	

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

$4/10 \text{ of } 80 = \square \rightarrow \boxed{\text{H}}$

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

$2/6 \text{ of } 111 = \square \rightarrow \boxed{\text{N}}$

$1/6 \text{ of } 108 = \square \rightarrow \boxed{\text{E}}$

$1/2 \text{ of } 56 = \square \rightarrow \boxed{\text{A}}$

$1/5 \text{ of } 100 = \square \rightarrow \boxed{\text{S}}$

$4/10 \text{ of } 10 = \square \rightarrow \boxed{\text{D}}$

$1/2 \text{ of } 28 = \square \rightarrow \boxed{\text{U}}$

$3/5 \text{ of } 45 = \square \rightarrow \boxed{\text{O}}$

$2/10 \text{ of } 95 = \square \rightarrow \boxed{\text{Y}}$

$3/5 \text{ of } 15 = \square \rightarrow \boxed{\text{I}}$

$3/8 \text{ of } 96 = \square \rightarrow \boxed{\text{M}}$

$3/6 \text{ of } 58 = \square \rightarrow \boxed{\text{L}}$

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

$3/5 \text{ of } 35 = \square \rightarrow \boxed{\text{P}}$

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

Scratch space:

CLUE 2
Rounding

The camp sonar scanner only displays terrain distances rounded to the nearest ten meters.

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

W									W				
70	2900	2300	90	370	200	200	200	9000	70	2300	2000	370	4300
2300	9000	3700	3700	2900	90	130	2300	2000	370	2900	230	230	2900
5000	300	300	2300										

Round 72 to the nearest ten → **W**

Round 8,700 to the nearest thousand → **A**

Round 260 to the nearest hundred → **O**

Round 369 to the nearest ten → **E**

Round 5,139 to the nearest thousand → **B**

Round 92 to the nearest ten → **N**

Round 4,322 to the nearest hundred → **M**

Round 230 to the nearest ten → **R**

Round 131 to the nearest ten → **G**

Round 239 to the nearest hundred → **S**

Round 3,744 to the nearest hundred → **P**

Round 1,584 to the nearest thousand → **H**

Round 2,918 to the nearest hundred → **I**

Round 2,289 to the nearest hundred → **T**

Scratch space:

CLUE 3 Percentages

We calculated the exact percentage of ancient symbols decoded on the altar wall.

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

T					T														
2	9	38	5	36	2	21	6	23	38	21	33	17	38	23	33	21	7	32	
							T												
42	32	7	14	34	6	5	2	7	14	26	42	21	32						

50% of 4 = → T	50% of 14 = → O	50% of 46 = → D
25% of 84 = → R	5% of 180 = → H	50% of 28 = → S
40% of 80 = → M	50% of 72 = → N	40% of 15 = → U
50% of 76 = → E	60% of 70 = → A	20% of 170 = → Q
50% of 10 = → I	50% of 52 = → W	25% of 132 = → F
10% of 170 = → L		

Scratch space:

CLUE 4 Exponents

The power grid reading showed energy growth calculated using repeated exponential factors.

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

F										F						F			
27	216	121	81	9	64	4	196	32	27	196	64	243	4	400	27	4	216	32	

	F				F						
125	27	243	169	49	27	243	9	216	4	125	

$3^3 = \square \rightarrow \text{F}$	$14^2 = \square \rightarrow \text{I}$	$5^3 = \square \rightarrow \text{A}$	$2^5 = \square \rightarrow \text{M}$
$6^3 = \square \rightarrow \text{O}$	$2^2 = \square \rightarrow \text{R}$	$3^5 = \square \rightarrow \text{E}$	$7^2 = \square \rightarrow \text{T}$
$3^4 = \square \rightarrow \text{N}$	$3^2 = \square \rightarrow \text{D}$	$20^2 = \square \rightarrow \text{S}$	$11^2 = \square \rightarrow \text{U}$
$4^3 = \square \rightarrow \text{B}$	$13^2 = \square \rightarrow \text{L}$		

Scratch space:

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

We checked the fraction of mud tracks left along the riverbank trail.

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:

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

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

$4/10 \text{ of } 30 = \boxed{}$

$2/8 \text{ of } 20 = \boxed{}$

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

$1/6 \text{ of } 36 = \boxed{}$

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

$2/6 \text{ of } 21 = \boxed{}$

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

$5/6 \text{ of } 12 = \boxed{}$

$2/8 \text{ of } 8 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain threw a grappling hook up the ledge, then laced up heavy snake boots.
2. The villain shined a torch flashlight into the cave, then laced up heavy snake boots.
3. The villain checked a compass watch for direction, then laced up heavy snake boots.
4. The villain swung a machete through vines, then clipped onto a climbing harness.
5. The villain swung a machete through vines, then stuffed maps into a map pouch.
6. The villain threw a grappling hook up the ledge, then adjusted a brass telescope.
7. The villain swung a machete through vines, then adjusted a brass telescope.
8. The villain checked a compass watch for direction, then clipped onto a climbing harness.
9. The villain swung a machete through vines, then laced up heavy snake boots.
10. The villain shined a torch flashlight into the cave, then clipped onto a climbing harness.
11. The villain threw a grappling hook up the ledge, then took a drink from a leather canteen.
12. The villain shined a torch flashlight into the cave, then took a drink from a leather canteen.

Answer Key

The Mystery of the Sunken Sun Stone

Culprit: Nora Wilde

Machete · Climbing Harness · Taps Right Boot · Felt Fedora · Mosquito Swarms

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT CARRY A MAP POUCH"

$\frac{4}{6}$ of 36 = 24 (T) · $\frac{4}{10}$ of 80 = 32 (H) · $\frac{1}{6}$ of 18 = 3 (V) · $\frac{2}{6}$ of 111 = 37 (N) · $\frac{1}{6}$ of 108 = 18 (E) · $\frac{1}{2}$ of 56 = 28 (A) · $\frac{1}{5}$ of 100 = 20 (S) · $\frac{4}{10}$ of 10 = 4 (D) · $\frac{1}{2}$ of 28 = 14 (U) · $\frac{3}{5}$ of 45 = 27 (O) · $\frac{2}{10}$ of 95 = 19 (Y) · $\frac{3}{5}$ of 15 = 9 (I) · $\frac{3}{8}$ of 96 = 36 (M) · $\frac{3}{6}$ of 58 = 29 (L) · $\frac{5}{10}$ of 20 = 10 (R) · $\frac{3}{5}$ of 35 = 21 (P) · $\frac{1}{4}$ of 88 = 22 (C)

Clue 2 (Rounding): "WITNESS SAW THEM TAPPING THEIR RIGHT BOOT"

Round 72 to the nearest ten = 70 (W) · Round 8,700 to the nearest thousand = 9000 (A) · Round 260 to the nearest hundred = 300 (O) · Round 369 to the nearest ten = 370 (E) · Round 5,139 to the nearest thousand = 5000 (B) · Round 92 to the nearest ten = 90 (N) · Round 4,322 to the nearest hundred = 4300 (M) · Round 230 to the nearest ten = 230 (R) · Round 131 to the nearest ten = 130 (G) · Round 239 to the nearest hundred = 200 (S) · Round 3,744 to the nearest hundred = 3700 (P) · Round 1,584 to the nearest thousand = 2000 (H) · Round 2,918 to the nearest hundred = 2900 (I) · Round 2,289 to the nearest hundred = 2300 (T)

Clue 3 (Percentages): "THE INTRUDER FLED FROM A MOSQUITO SWARM"

50% of 4 = 2 (T) · 50% of 14 = 7 (O) · 50% of 46 = 23 (D) · 25% of 84 = 21 (R) · 5% of 180 = 9 (H) · 50% of 28 = 14 (S) · 40% of 80 = 32 (M) · 50% of 72 = 36 (N) · 40% of 15 = 6 (U) · 50% of 76 = 38 (E) · 60% of 70 = 42 (A) · 20% of 170 = 34 (Q) · 50% of 10 = 5 (I) · 50% of 52 = 26 (W) · 25% of 132 = 33 (F) · 10% of 170 = 17 (L)

Clue 4 (Exponents): "FOUND BRIM FIBERS FROM A FELT FEDORA"

$3^3 = 27$ (F) · $14^2 = 196$ (I) · $5^3 = 125$ (A) · $2^5 = 32$ (M) · $6^3 = 216$ (O) · $2^2 = 4$ (R) · $3^5 = 243$ (E) · $7^2 = 49$ (T) · $3^4 = 81$ (N) · $3^2 = 9$ (D) · $20^2 = 400$ (S) · $11^2 = 121$ (U) · $4^3 = 64$ (B) · $13^2 = 169$ (L)

Clue 5 (Fractions of a number): surviving statement is box 4 → Nora Wilde

$\frac{1}{6}$ of 66 = 11 · $\frac{1}{6}$ of 48 = 8 · $\frac{4}{10}$ of 30 = 12 · $\frac{2}{8}$ of 20 = 5 · $\frac{2}{6}$ of 3 = 1 · $\frac{1}{6}$ of 36 = 6 · $\frac{1}{3}$ of 27 = 9 · $\frac{2}{6}$ of 21 = 7 · $\frac{1}{4}$ of 12 = 3 · $\frac{5}{6}$ of 12 = 10 · $\frac{2}{8}$ of 8 = 2