



The Mystery of the Whispering Sun Stone

Grade 10 math · Pythagorean theorem, Square roots, Exponents, Order of operations · Reading level grades 7-9

Detective: _____ Date: _____

An ancient golden relic has disappeared from the inner sanctum of the Whispering Palms Temple! Work through the puzzle clues to unmask the rogue adventurer.

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 adventurer is _____

Possible suspects

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

NAME	GEAR USED	ESCAPE VEHICLE	DOMINANT HAND	BANDANA COLOR	FEAR TRAIT
Oscar Thorne	Laser Cutter	Zip Line	Left-handed	Red Bandana	Afraid of Snakes
Iris Chang	Machete	Zip Line	Right-handed	Blue Bandana	Afraid of Snakes
Maya Lin	Torch	Zip Line	Left-handed	Red Bandana	Afraid of Heights
Piper Hayes	Machete	Speedboat	Right-handed	Red Bandana	Afraid of Heights
Tessa Young	Machete	Seaplane	Right-handed	Green Bandana	Afraid of Heights
Quincy Marsh	Laser Cutter	Seaplane	Left-handed	Red Bandana	Afraid of Snakes
Wyatt Knox	Laser Cutter	Seaplane	Right-handed	Green Bandana	Afraid of Snakes
Milo Briggs	Machete	Zip Line	Left-handed	Red Bandana	Afraid of Snakes
Kai Tanaka	Smoke Bomb	Speedboat	Left-handed	Red Bandana	Afraid of Heights
Hugo Silva	Smoke Bomb	Dirt Bike	Left-handed	Green Bandana	Afraid of Heights
Elena Rostova	Smoke Bomb	Seaplane	Right-handed	Blue Bandana	Afraid of Snakes
Jasper Reed	Machete	Dirt Bike	Left-handed	Red Bandana	Afraid of Snakes
Luna Park	Laser Cutter	Zip Line	Right-handed	Red Bandana	Afraid of Snakes
Rosa Gomez	Machete	Speedboat	Left-handed	Green Bandana	Afraid of Snakes
Devon Holt	Torch	Seaplane	Left-handed	Red Bandana	Afraid of Spiders
Clara Cruz	Machete	Dirt Bike	Left-handed	Green Bandana	Afraid of Spiders
Xena Cross	Smoke Bomb	Speedboat	Left-handed	Red Bandana	Afraid of Snakes
Nina Patel	Machete	Hovercraft	Left-handed	Blue Bandana	Afraid of Snakes
Violet Vance	Grappling Hook	Zip Line	Right-handed	Blue Bandana	Afraid of Snakes
Brody Vance	Machete	Hovercraft	Left-handed	Blue Bandana	Afraid of Heights
Greta Stone	Smoke Bomb	Speedboat	Left-handed	Green Bandana	Afraid of Heights

CLUE 1

Pythagorean theorem

To trace the villain's path across the temple courtyard, you calculate the shortcut distance between two ancient obelisks.

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

T																T
50	40	125	116	30	123	123	100	30	15	82	30	82	15	74	50	
125	85	75	100	37	125	74	15	100	82	30	39	50	34	30	87	125

legs 14 and 48, hypotenuse = → **T**

legs 9 and 12, hypotenuse = → **N**

legs 15 and 36, hypotenuse = → **R**

legs 27 and 120, hypotenuse = → **L**

legs 16 and 30, hypotenuse = → **B**

legs 80 and 84, hypotenuse = → **V**

legs 18 and 80, hypotenuse = → **D**

legs 35 and 120, hypotenuse = → **E**

legs 24 and 32, hypotenuse = → **H**

legs 40 and 75, hypotenuse = → **S**

legs 21 and 72, hypotenuse = → **C**

legs 28 and 96, hypotenuse = → **A**

legs 24 and 70, hypotenuse = → **O**

legs 18 and 24, hypotenuse = → **I**

legs 60 and 63, hypotenuse = → **K**

legs 12 and 35, hypotenuse = → **P**

Scratch space:

CLUE 2



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

[illegible]

$\text{sqrt}(169) = \square \rightarrow \boxed{\text{T}}$

$\text{sqrt}(361) = \boxed{} \rightarrow \boxed{\text{D}}$

sqrt(289) = →

sqrt(529) = → **R**

sqrt(9) = → **E**

sqrt(100) = → **Y**

sqrt(625) = → **F**

sqrt(441) = →

sqrt(36) = → **H**

sqrt(25) = → **A**

$\text{sqrt}(64) = \square \rightarrow \boxed{\text{N}}$

sqrt(576) = → ☒

sqrt(16) = → **L**

sqrt(256) = → **P**

sqrt(4) = → **S**

Scratch space:

CLUE 3 Exponents

A passcode dial doubles its vault key combinations with every gear turn, requiring an exponent calculation.

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

A			A												
36	225	27	36	81	216	625	27	196	8	216	4	441	36	225	225

		A												
225	128	36	441	216	49	196	8	216	225	27	9	9	289	

$6^2 = \square \rightarrow \text{A}$	$14^2 = \square \rightarrow \text{T}$	$5^4 = \square \rightarrow \text{I}$	$17^2 = \square \rightarrow \text{P}$
$21^2 = \square \rightarrow \text{R}$	$6^3 = \square \rightarrow \text{E}$	$3^2 = \square \rightarrow \text{O}$	$9^2 = \square \rightarrow \text{K}$
$2^7 = \square \rightarrow \text{C}$	$2^2 = \square \rightarrow \text{G}$	$7^2 = \square \rightarrow \text{D}$	$3^3 = \square \rightarrow \text{N}$
$2^3 = \square \rightarrow \text{H}$	$15^2 = \square \rightarrow \text{S}$		

Scratch space:

CLUE 4
Order of operations

To balance the mechanical trap scale, you calculate the weighted total of ancient coins using step-by-step operations.

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

A					A							A			A		
104	26	8	96	107	104	86	26	65	88	76	35	26	104	74	28	104	76
					A												
107	34	9	32	96	104	35	35	90	8	76	88	8	32	8			

$11 \times 10 - 6 = \square \rightarrow \text{A}$

$62 + 4 \times 3 = \square \rightarrow \text{P}$

$10 \times 10 - 4 = \square \rightarrow \text{D}$

$8 \times 2 - 7 = \square \rightarrow \text{U}$

$10 \times 11 - 22 = \square \rightarrow \text{C}$

$6 \times 5 - 2 = \square \rightarrow \text{W}$

$7 \times 6 - 7 = \square \rightarrow \text{T}$

$16 + 4 \times 4 = \square \rightarrow \text{N}$

$10 \times 9 - 25 = \square \rightarrow \text{I}$

$2 + 4 \times 6 = \square \rightarrow \text{R}$

$18 + 2 \times 8 = \square \rightarrow \text{O}$

$9 \times 3 - 19 = \square \rightarrow \text{E}$

$58 + 7 \times 4 = \square \rightarrow \text{B}$

$11 \times 9 - 23 = \square \rightarrow \text{S}$

$62 + 7 \times 4 = \square \rightarrow \text{H}$

$9 \times 12 - 1 = \square \rightarrow \text{F}$

Scratch space:

CLUE 5**Square roots - the last clue**

You measure the square base of a stone pillar to determine which escape route the thief took.

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:

$\text{sqrt}(100) = \boxed{}$

$\text{sqrt}(25) = \boxed{}$

$\text{sqrt}(36) = \boxed{}$

$\text{sqrt}(81) = \boxed{}$

$\text{sqrt}(1) = \boxed{}$

$\text{sqrt}(49) = \boxed{}$

$\text{sqrt}(4) = \boxed{}$

$\text{sqrt}(121) = \boxed{}$

$\text{sqrt}(9) = \boxed{}$

$\text{sqrt}(64) = \boxed{}$

$\text{sqrt}(144) = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain sliced the glass with a laser cutter, then sped off in a speedboat.
2. The villain cleared the overgrown path with a machete, then flew away on a seaplane.
3. The villain lit up the dark vault using a torch, then zoomed down the trail on a dirt bike.
4. The villain sliced the glass with a laser cutter, then flew away on a seaplane.
5. The villain masked the theft using a smoke bomb, then sped off in a speedboat.
6. The villain sliced the glass with a laser cutter, then zipped down the canopy cable on a zip line.
7. The villain masked the theft using a smoke bomb, then flew away on a seaplane.
8. The villain cleared the overgrown path with a machete, then zoomed down the trail on a dirt bike.
9. The villain snatched the relic with a grappling hook, then flew away on a seaplane.
10. The villain cleared the overgrown path with a machete, then zipped down the canopy cable on a zip line.
11. The villain masked the theft using a smoke bomb, then zoomed down the trail on a dirt bike.
12. The villain cleared the overgrown path with a machete, then escaped across the marsh on a hovercraft.

Answer Key

The Mystery of the Whispering Sun Stone

Culprit: Quincy Marsh

Laser Cutter · Seaplane · Left-handed · Red Bandana · Afraid of Snakes

Trail: Start 21 → Clue 1 18 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Pythagorean theorem): "THE VILLAIN DID NOT ESCAPE ON A DIRT BIKE"

legs 14 and 48, hypotenuse = 50 (T) · legs 9 and 12, hypotenuse = 15 (N) · legs 15 and 36, hypotenuse = 39 (R) · legs 27 and 120, hypotenuse = 123 (L) · legs 16 and 30, hypotenuse = 34 (B) · legs 80 and 84, hypotenuse = 116 (V) · legs 18 and 80, hypotenuse = 82 (D) · legs 35 and 120, hypotenuse = 125 (E) · legs 24 and 32, hypotenuse = 40 (H) · legs 40 and 75, hypotenuse = 85 (S) · legs 21 and 72, hypotenuse = 75 (C) · legs 28 and 96, hypotenuse = 100 (A) · legs 24 and 70, hypotenuse = 74 (O) · legs 18 and 24, hypotenuse = 30 (I) · legs 60 and 63, hypotenuse = 87 (K) · legs 12 and 35, hypotenuse = 37 (P)

Clue 2 (Square roots): "THE SNOOP USED THEIR LEFT HAND TO PRY THE DOOR"

$\sqrt{169} = 13$ (T) · $\sqrt{361} = 19$ (D) · $\sqrt{289} = 17$ (I) · $\sqrt{529} = 23$ (R) · $\sqrt{9} = 3$ (E) · $\sqrt{100} = 10$ (Y) · $\sqrt{625} = 25$ (F) · $\sqrt{441} = 21$ (U) · $\sqrt{36} = 6$ (H) · $\sqrt{25} = 5$ (A) · $\sqrt{64} = 8$ (N) · $\sqrt{576} = 24$ (O) · $\sqrt{16} = 4$ (L) · $\sqrt{256} = 16$ (P) · $\sqrt{4} = 2$ (S)

Clue 3 (Exponents): "A SNAKE IN THE GRASS SCARED THE SNOOP"

$6^2 = 36$ (A) · $14^2 = 196$ (T) · $5^4 = 625$ (I) · $17^2 = 289$ (P) · $21^2 = 441$ (R) · $6^3 = 216$ (E) · $3^2 = 9$ (O) · $9^2 = 81$ (K) · $2^7 = 128$ (C) · $2^2 = 4$ (G) · $7^2 = 49$ (D) · $3^3 = 27$ (N) · $2^3 = 8$ (H) · $15^2 = 225$ (S)

Clue 4 (Order of operations): "A RED FABRIC STRAP WAS FOUND AT THE SCENE"

$11 \times 10 - 6 = 104$ (A) · $62 + 4 \times 3 = 74$ (P) · $10 \times 10 - 4 = 96$ (D) · $8 \times 2 - 7 = 9$ (U) · $10 \times 11 - 22 = 88$ (C) · $6 \times 5 - 2 = 28$ (W) · $7 \times 6 - 7 = 35$ (T) · $16 + 4 \times 4 = 32$ (N) · $10 \times 9 - 25 = 65$ (I) · $2 + 4 \times 6 = 26$ (R) · $18 + 2 \times 8 = 34$ (O) · $9 \times 3 - 19 = 8$ (E) · $58 + 7 \times 4 = 86$ (B) · $11 \times 9 - 23 = 76$ (S) · $62 + 7 \times 4 = 90$ (H) · $9 \times 12 - 1 = 107$ (F)

Clue 5 (Square roots): surviving statement is box 4 → Quincy Marsh

$\sqrt{100} = 10$ · $\sqrt{25} = 5$ · $\sqrt{36} = 6$ · $\sqrt{81} = 9$ · $\sqrt{1} = 1$ · $\sqrt{49} = 7$ · $\sqrt{4} = 2$ · $\sqrt{121} = 11$ · $\sqrt{9} = 3$ · $\sqrt{64} = 8$ · $\sqrt{144} = 12$