The Mystery of the Whispering Temple

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

Detective: _____ **Date:** _____

The Golden Artifact has vanished from the Jungle Basecamp! The Chief Archeologist was distracted by a wild bird, leaving the camp empty. Only one of the expedition members could have bypassed the security grid. It is up to you, the Junior Rangers, to solve the clues, track down the Rogue Explorer, and recover the artifact!

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 Explorer is _____

Possible suspects

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

NAME	SIGNATURE TOOL	SCOUT COMPANION	WATCH PLACEMENT	CAP COLOR	TRICKED BY
Ernest Shackleton	Grappling Hook	Iguana Companion	Right Wrist	Khaki Cap	Fake Snakes
Matthew Henson	Machete	Fennec Fox	Right Wrist	Crimson Cap	Recorded Growls
Nellie Bly	Laser Torch	Scout Ferret	Left Wrist	Khaki Cap	Fake Snakes
Charles Darwin	Machete	Scout Ferret	Right Wrist	Crimson Cap	Fake Snakes
Sacagawea	Machete	Fennec Fox	Right Wrist	Khaki Cap	Recorded Growls
James Cook	Metal Detector	Capuchin Monkey	Right Wrist	Khaki Cap	Recorded Growls
Robert Peary	Sonic Compass	Macaw Companion	Right Wrist	Crimson Cap	Fake Snakes
Mae Jemison	Sonic Compass	Scout Ferret	Left Wrist	Crimson Cap	Fake Snakes
Jane Goodall	Sonic Compass	Capuchin Monkey	Left Wrist	Crimson Cap	Recorded Growls
Sylvia Earle	Metal Detector	Macaw Companion	Right Wrist	Navy Cap	Mirror Illusion
Lewis Clark	Metal Detector	Macaw Companion	Left Wrist	Navy Cap	Recorded Growls
Amelia Earhart	Metal Detector	Iguana Companion	Right Wrist	Navy Cap	Fake Snakes
Lara Croft	Laser Torch	Macaw Companion	Right Wrist	Khaki Cap	Mirror Illusion
Yuri Gagarin	Grappling Hook	Scout Ferret	Left Wrist	Khaki Cap	Recorded Growls
Ibn Battuta	Metal Detector	Fennec Fox	Right Wrist	Khaki Cap	Fake Snakes
Thor Heyerdahl	Metal Detector	Macaw Companion	Right Wrist	Crimson Cap	Recorded Growls
Roald Amundsen	Laser Torch	Fennec Fox	Right Wrist	Khaki Cap	Fake Snakes
Steve Irwin	Grappling Hook	Scout Ferret	Right Wrist	Khaki Cap	Fake Snakes
Indiana Jones	Sonic Compass	Capuchin Monkey	Right Wrist	Khaki Cap	Fake Snakes
Ranulph Fiennes	Sonic Compass	Macaw Companion	Right Wrist	Crimson Cap	Mirror Illusion
Jacques Cousteau	Metal Detector	Macaw Companion	Left Wrist	Khaki Cap	Recorded Growls

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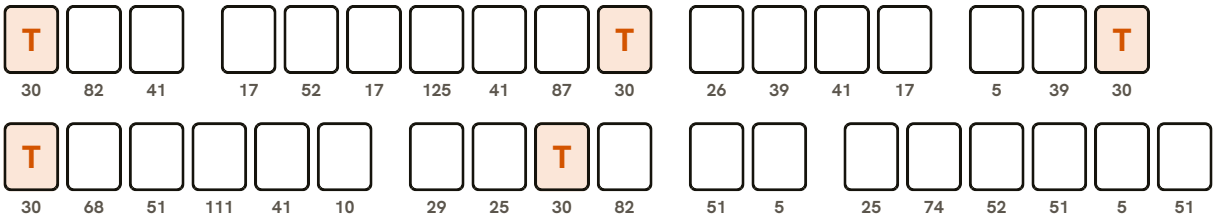
CLUE 1 Pythagorean theorem

> To calculate the shortcut distance between two campsite lookouts across the canyon, the junior rangers map out a right triangle of ropes.

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



legs 18 and 24, hypotenuse = ☐ → **T**

legs 7 and 24, hypotenuse = ☐ → **I**

legs 60 and 63, hypotenuse = ☐ → **C**

legs 10 and 24, hypotenuse = ☐ → **D**

legs 15 and 36, hypotenuse = ☐ → **O**

legs 24 and 45, hypotenuse = ☐ → **A**

legs 9 and 40, hypotenuse = ☐ → **E**

legs 3 and 4, hypotenuse = ☐ → **N**

legs 8 and 15, hypotenuse = ☐ → **S**

legs 20 and 48, hypotenuse = ☐ → **U**

legs 6 and 8, hypotenuse = ☐ → **L**

legs 32 and 60, hypotenuse = ☐ → **R**

legs 35 and 120, hypotenuse = ☐ → **P**

legs 36 and 105, hypotenuse = ☐ → **V**

legs 18 and 80, hypotenuse = ☐ → **H**

legs 24 and 70, hypotenuse = ☐ → **G**

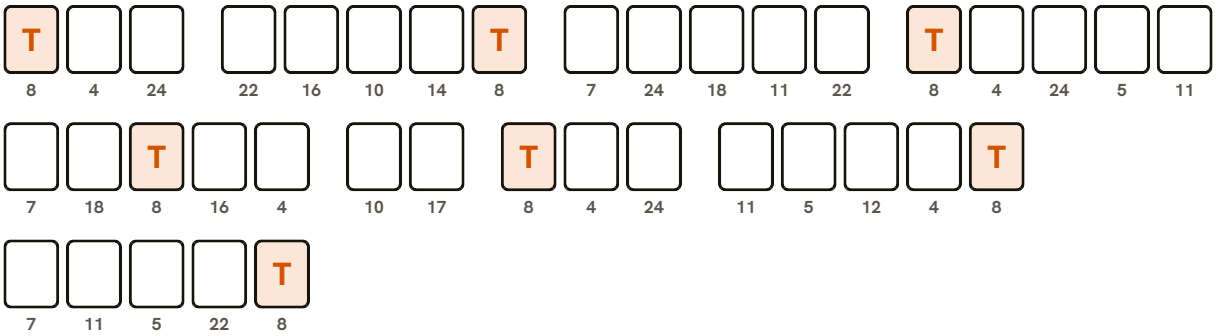
legs 20 and 21, hypotenuse = ☐ → **W**

Scratch space:

CLUE 2 Square roots

> The expedition team discovers a perfectly square ancient stone floor tiles layout and must calculate the side length from the total area.

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



sqrt(64) = ☐ → T

sqrt(256) = ☐ → C

sqrt(144) = ☐ → G

sqrt(100) = ☐ → O

sqrt(484) = ☐ → S

sqrt(324) = ☐ → A

sqrt(49) = ☐ → W

sqrt(25) = ☐ → I

sqrt(576) = ☐ → E

sqrt(289) = ☐ → N

sqrt(196) = ☐ → U

sqrt(121) = ☐ → R

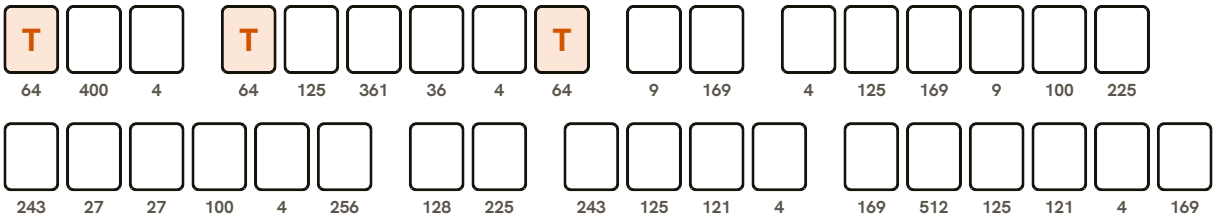
sqrt(16) = ☐ → H

Scratch space:

CLUE 3 Exponents

> A colony of bioluminescent cave beetles doubles in size every hour, requiring the team to compute the power formula for the total count.

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



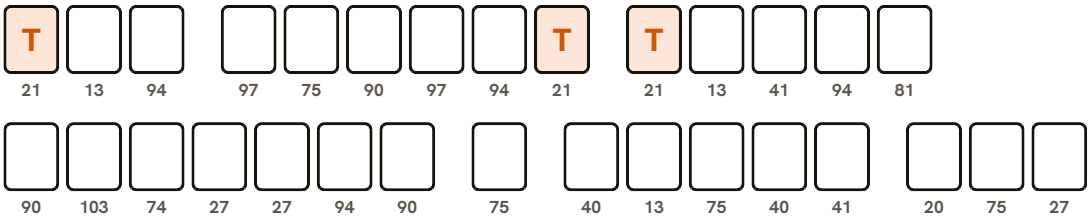
8^2 = ☐ → T	11^2 = ☐ → K	19^2 = ☐ → R	4^4 = ☐ → D
8^3 = ☐ → N	3^2 = ☐ → I	20^2 = ☐ → H	2^2 = ☐ → E
13^2 = ☐ → S	15^2 = ☐ → Y	2^7 = ☐ → B	10^2 = ☐ → L
6^2 = ☐ → G	3^5 = ☐ → F	5^3 = ☐ → A	3^3 = ☐ → O

Scratch space:

CLUE 4 Order of operations

> The quartermaster tally sheet for gear crates uses complex brackets to group ropes, rations, and carabiners into equal team distributions.

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



11 × 4 - 23 = ☐ → T

60 + 3 × 5 = ☐ → A

5 × 8 - 20 = ☐ → C

12 × 11 - 29 = ☐ → R

9 × 10 - 16 = ☐ → O

9 × 5 - 4 = ☐ → I

5 × 11 - 28 = ☐ → P

10 × 12 - 26 = ☐ → E

7 × 6 - 2 = ☐ → K

10 × 10 - 10 = ☐ → D

5 × 8 - 27 = ☐ → H

69 + 3 × 4 = ☐ → F

79 + 9 × 2 = ☐ → G

Scratch space:

CLUE 5 Square roots - the last clue

> The search rescue drone maps a square zone of the dense canopy, and the team needs to find its side width from the total square meters.

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:

sqrt(81) = ☐ sqrt(49) = ☐ sqrt(25) = ☐ sqrt(9) = ☐ sqrt(64) = ☐

sqrt(144) = ☐ sqrt(4) = ☐ sqrt(100) = ☐ sqrt(16) = ☐ sqrt(1) = ☐

sqrt(36) = ☐

Step 2 - cross out the sentence with each answer:

1. The villain uncovers hidden metal vault doors with a metal detector, then sends a clever ferret to sneak through the vents.
2. The villain navigates the misty labyrinth using a sonic compass, then rests while a pet iguana warms up on a rock.
3. The villain clears the dense jungle path with a machete, then signals a scout macaw to watch the skies.
4. The villain swings across the gorge using a grappling hook, then signals a scout macaw to watch the skies.
5. The villain navigates the misty labyrinth using a sonic compass, then shares a banana with a capuchin companion.
6. The villain swings across the gorge using a grappling hook, then shares a banana with a capuchin companion.
7. The villain swings across the gorge using a grappling hook, then sends a clever ferret to sneak through the vents.
8. The villain slices open the ancient vines with a laser torch, then sends a clever ferret to sneak through the vents.
9. The villain slices open the ancient vines with a laser torch, then follows a quick fennec fox through the secret tunnels.
10. The villain uncovers hidden metal vault doors with a metal detector, then shares a banana with a capuchin companion.
11. The villain uncovers hidden metal vault doors with a metal detector, then follows a quick fennec fox through the secret tunnels.
12. The villain clears the dense jungle path with a machete, then shares a banana with a capuchin companion.

TEACHER / PARENT

Answer Key

The Mystery of the Whispering Temple

Culprit: Ibn Battuta

Metal Detector · Fennec Fox · Right Wrist · Khaki Cap · Fake Snakes

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Pythagorean theorem): "THE SUSPECT DOES NOT TRAVEL WITH AN IGUANA"

legs 18 and 24, hypotenuse = 30 (T) · legs 7 and 24, hypotenuse = 25 (I) · legs 60 and 63, hypotenuse = 87 (C) · legs 10 and 24, hypotenuse = 26 (D) · legs 15 and 36, hypotenuse = 39 (O) · legs 24 and 45, hypotenuse = 51 (A) · legs 9 and 40, hypotenuse = 41 (E) · legs 3 and 4, hypotenuse = 5 (N) · legs 8 and 15, hypotenuse = 17 (S) · legs 20 and 48, hypotenuse = 52 (U) · legs 6 and 8, hypotenuse = 10 (L) · legs 32 and 60, hypotenuse = 68 (R) · legs 35 and 120, hypotenuse = 125 (P) · legs 36 and 105, hypotenuse = 111 (V) · legs 18 and 80, hypotenuse = 82 (H) · legs 24 and 70, hypotenuse = 74 (G) · legs 20 and 21, hypotenuse = 29 (W)

Clue 2 (Square roots): "THE SCOUT WEARS THEIR WATCH ON THE RIGHT WRIST"

sqrt(64) = 8 (T) · sqrt(256) = 16 (C) · sqrt(144) = 12 (G) · sqrt(100) = 10 (O) · sqrt(484) = 22 (S) · sqrt(324) = 18 (A) · sqrt(49) = 7 (W) · sqrt(25) = 5 (I) · sqrt(576) = 24 (E) · sqrt(289) = 17 (N) · sqrt(196) = 14 (U) · sqrt(121) = 11 (R) · sqrt(16) = 4 (H)

Clue 3 (Exponents): "THE TARGET IS EASILY FOOLED BY FAKE SNAKES"

8^2 = 64 (T) · 11^2 = 121 (K) · 19^2 = 361 (R) · 4^4 = 256 (D) · 8^3 = 512 (N) · 3^2 = 9 (I) · 20^2 = 400 (H) · 2^2 = 4 (E) · 13^2 = 169 (S) · 15^2 = 225 (Y) · 2^7 = 128 (B) · 10^2 = 100 (L) · 6^2 = 36 (G) · 3^5 = 243 (F) · 5^3 = 125 (A) · 3^3 = 27 (O)

Clue 4 (Order of operations): "THE GADGET THIEF DROPPED A KHAKI CAP"

11 × 4 - 23 = 21 (T) · 60 + 3 × 5 = 75 (A) · 5 × 8 - 20 = 20 (C) · 12 × 11 - 29 = 103 (R) · 9 × 10 - 16 = 74 (O) · 9 × 5 - 4 = 41 (I) · 5 × 11 - 28 = 27 (P) · 10 × 12 - 26 = 94 (E) · 7 × 6 - 2 = 40 (K) · 10 × 10 - 10 = 90 (D) · 5 × 8 - 27 = 13 (H) · 69 + 3 × 4 = 81 (F) · 79 + 9 × 2 = 97 (G)

Clue 5 (Square roots): surviving statement is box 11 → Ibn Battuta

sqrt(81) = 9 · sqrt(49) = 7 · sqrt(25) = 5 · sqrt(9) = 3 · sqrt(64) = 8 · sqrt(144) = 12 · sqrt(4) = 2 · sqrt(100) = 10 · sqrt(16) = 4 · sqrt(1) = 1 · sqrt(36) = 6