



The Whispering Canopy Heist

Grade 9 math · Two-step equations, Exponents, Square roots, Integers · Reading level grades 7-9

Detective: _____ Date: _____

A priceless gold artifact has vanished from the temple ruins! The culprit left a trail of clues deep in the jungle. Our team of expert trackers must solve the mystery before the thief escapes the canopy.

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 archaeologist is _____

Possible suspects

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

NAME	ESCAPE GEAR	SPECIALIST TOOL	DOMINANT HAND	CLUE AT SCENE	SUSPECT PHOBIA
Charles Darwin	heavy machete	decoder ring	left handed grip	golden temple dust	bright flashlights
Jacques Cousteau	climbing spikes	night visor	right handed grip	cobweb strands	shiny gold coins
Nellie Bly	heavy machete	radio jammer	left handed grip	golden temple dust	bright flashlights
Lewis Clark	grappling hook	night visor	left handed grip	golden temple dust	bright flashlights
Gertrude Bell	glider wings	night visor	left handed grip	cobweb strands	shiny gold coins
Roy Andrews	grappling hook	decoder ring	left handed grip	cobweb strands	loud snake hisses
Sally Ride	climbing spikes	thermal cloak	left handed grip	golden temple dust	bright flashlights
Jane Goodall	glider wings	thermal cloak	left handed grip	cobweb strands	shiny gold coins
Ernest Shackleton	climbing spikes	night visor	right handed grip	golden temple dust	bright flashlights
Laura Dekker	plasma torch	sonic compass	left handed grip	cobweb strands	loud snake hisses
Daniel Boone	climbing spikes	night visor	left handed grip	golden temple dust	shiny gold coins
Robert Peary	climbing spikes	night visor	right handed grip	green fern leaves	shiny gold coins
Mary Anning	plasma torch	radio jammer	left handed grip	green fern leaves	shiny gold coins
Ada Lovelace	climbing spikes	night visor	left handed grip	golden temple dust	loud snake hisses
Percy Fawcett	grappling hook	sonic compass	left handed grip	green fern leaves	loud snake hisses
Hiram Bingham	grappling hook	radio jammer	left handed grip	cobweb strands	loud snake hisses
Steve Irwin	grappling hook	decoder ring	right handed grip	cobweb strands	loud snake hisses
Sacagawea	glider wings	thermal cloak	left handed grip	cobweb strands	loud snake hisses
Marco Polo	climbing spikes	sonic compass	left handed grip	cobweb strands	loud snake hisses
Amelia Earhart	grappling hook	decoder ring	right handed grip	green fern leaves	loud snake hisses
Matthew Henson	climbing spikes	sonic compass	left handed grip	golden temple dust	bright flashlights

CLUE 1

Two-step equations

We found a locked decoder box left by the thief. To crack the lock code, we have to solve a puzzle where twice the code value plus five equals twenty-one.

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

T			T					T							T			
12	13	8	12	6	11	9	8	12	21	7	8	16	17	7	12	3	16	8
6	11	6	21	4	7	10	6	22	22	8	11							

$5x + 12 = 72, x = \square \rightarrow \boxed{\text{T}}$

$2x + 12 = 30, x = \square \rightarrow \boxed{\text{G}}$

$5x + 9 = 59, x = \square \rightarrow \boxed{\text{J}}$

$2x + 11 = 45, x = \square \rightarrow \boxed{\text{N}}$

$7x + 6 = 118, x = \square \rightarrow \boxed{\text{S}}$

$3x + 8 = 41, x = \square \rightarrow \boxed{\text{R}}$

$4x + 5 = 93, x = \square \rightarrow \boxed{\text{M}}$

$6x + 4 = 52, x = \square \rightarrow \boxed{\text{E}}$

$2x + 11 = 23, x = \square \rightarrow \boxed{\text{A}}$

$7x + 6 = 27, x = \square \rightarrow \boxed{\text{U}}$

$9x + 5 = 194, x = \square \rightarrow \boxed{\text{D}}$

$2x + 2 = 10, x = \square \rightarrow \boxed{\text{I}}$

$6x + 8 = 86, x = \square \rightarrow \boxed{\text{H}}$

$4x + 11 = 39, x = \square \rightarrow \boxed{\text{O}}$

Scratch space:

CLUE 2

The thief's drone path multiplied its speed by powers of two every minute. Calculating the final exponent level will help us pinpoint where the drone dropped its cargo.

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

The diagram illustrates a sequence of numbers arranged in two rows. The top row contains 16 boxes, and the bottom row contains 14 boxes. Some boxes are shaded orange and labeled 'T', indicating they are 'true' or 'active'. The numbers below the boxes represent the values in each position.

Row	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8	Box 9	Box 10	Box 11	Box 12	Box 13	Box 14	Box 15	Box 16
Top	T									T				T		
Bottom					T											

Numbers below the boxes (Top row from left to right): 36, 81, 100, 121, 729, 121, 243, 100, 144, 36, 125, 343, 196, 36, 100, 121.

Numbers below the boxes (Bottom row from left to right): 361, 441, 100, 256, 36, 81, 361, 25, 4, 100, 4, 32, 343, 196, 243.

$$6^2 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$21^2 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$10^2 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$3^6 = \boxed{} \rightarrow \boxed{\mathbf{U}}$$

$2^2 = \square \rightarrow \boxed{\text{D}}$

$9^2 = \square \rightarrow \boxed{\text{H}}$

$$16^2 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$19^2 = \boxed{} \rightarrow \boxed{\text{A}}$$

$14^2 = \boxed{} \rightarrow \boxed{}$

$5^3 = \square \rightarrow \boxed{W}$

$$3^5 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$11^2 = \boxed{} \rightarrow \boxed{\text{S}}$$

$5^2 = \square \rightarrow \boxed{\mathbf{N}}$

$$2^5 = \boxed{} \rightarrow \boxed{\mathbf{G}}$$

$$12^2 = \boxed{} \rightarrow \boxed{\text{C}}$$

$7^3 = \boxed{} \rightarrow \boxed{\text{R}}$

Scratch space:

CLUE 3 Square roots

We found a grid of ancient stone tiles blocking the path. The safe route is marked by tiles whose numbers are perfect square roots of the room's key code.

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

T																
11	5	14	17	23	3	3	22	23	8	24	21	15	23	3	16	
13	3	8	6	21	24	9	22	14	5	12	21	21	14	21		

$\sqrt{121} = \square \rightarrow \boxed{\text{T}}$

$\sqrt{64} = \square \rightarrow \boxed{\text{U}}$

$\sqrt{225} = \square \rightarrow \boxed{\text{F}}$

$\sqrt{169} = \square \rightarrow \boxed{\text{L}}$

$\sqrt{36} = \square \rightarrow \boxed{\text{D}}$

$\sqrt{256} = \square \rightarrow \boxed{\text{M}}$

$\sqrt{196} = \square \rightarrow \boxed{\text{E}}$

$\sqrt{289} = \square \rightarrow \boxed{\text{C}}$

$\sqrt{529} = \square \rightarrow \boxed{\text{R}}$

$\sqrt{484} = \square \rightarrow \boxed{\text{K}}$

$\sqrt{9} = \square \rightarrow \boxed{\text{O}}$

$\sqrt{144} = \square \rightarrow \boxed{\text{I}}$

$\sqrt{441} = \square \rightarrow \boxed{\text{S}}$

$\sqrt{576} = \square \rightarrow \boxed{\text{N}}$

$\sqrt{25} = \square \rightarrow \boxed{\text{H}}$

$\sqrt{81} = \square \rightarrow \boxed{\text{A}}$

Scratch space:

CLUE 4 Integers

To track the suspect's altitude changes inside the cavern, we must combine the positive climbs and the negative drops on the elevation tracker.

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

W									W										
25	7	12	35	16	11	37	39	35	18	25	7	18	2	40	32	14	11	37	2
35	11	40	22	7	W														
					25	14	17	17											

$(-8) + 33 = \square \rightarrow \boxed{\text{W}}$	$(-11) + 13 = \square \rightarrow \boxed{\text{S}}$	$(-2) + 9 = \square \rightarrow \boxed{\text{E}}$
$(-11) + 28 = \square \rightarrow \boxed{\text{L}}$	$12 - (-10) = \square \rightarrow \boxed{\text{H}}$	$(-5) + 44 = \square \rightarrow \boxed{\text{C}}$
$30 - (-10) = \square \rightarrow \boxed{\text{T}}$	$(-9) + 46 = \square \rightarrow \boxed{\text{D}}$	$(-3) + 35 = \square \rightarrow \boxed{\text{R}}$
$(-7) + 19 = \square \rightarrow \boxed{\text{F}}$	$9 - (-9) = \square \rightarrow \boxed{\text{B}}$	$(-14) + 25 = \square \rightarrow \boxed{\text{N}}$
$(-14) + 49 = \square \rightarrow \boxed{\text{O}}$	$(-8) + 22 = \square \rightarrow \boxed{\text{A}}$	$(-8) + 24 = \square \rightarrow \boxed{\text{U}}$

Scratch space:

CLUE 5**Two-step equations - the last clue**

A tripwire trap is counting down. To safely disarm it, we need to balance the dial where three times our frequency minus twelve equals sixty.

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:

$2x + 9 = 19, x = \boxed{}$

$9x + 12 = 111, x = \boxed{}$

$7x + 7 = 49, x = \boxed{}$

$2x + 1 = 21, x = \boxed{}$

$6x + 11 = 65, x = \boxed{}$

$8x + 8 = 32, x = \boxed{}$

$5x + 5 = 25, x = \boxed{}$

$7x + 4 = 60, x = \boxed{}$

$7x + 6 = 13, x = \boxed{}$

$5x + 7 = 17, x = \boxed{}$

$8x + 3 = 59, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain scales the steep stone wall with climbing spikes, then vanishes into the shadows under a thermal cloak.
2. The villain soars from the canopy on glider wings, then tracks the hidden coordinates using a sonic compass.
3. The villain soars from the canopy on glider wings, then disrupts our rescue team with a radio jammer.
4. The villain scales the steep stone wall with climbing spikes, then navigates the dark corridors with a night visor.
5. The villain swings across the canyon with a grappling hook, then solves the ancient door lock with a decoder ring.
6. The villain scales the steep stone wall with climbing spikes, then tracks the hidden coordinates using a sonic compass.
7. The villain soars from the canopy on glider wings, then navigates the dark corridors with a night visor.
8. The villain cuts through the iron door with a plasma torch, then solves the ancient door lock with a decoder ring.
9. The villain swings across the canyon with a grappling hook, then tracks the hidden coordinates using a sonic compass.
10. The villain cuts through the iron door with a plasma torch, then disrupts our rescue team with a radio jammer.
11. The villain soars from the canopy on glider wings, then vanishes into the shadows under a thermal cloak.
12. The villain cuts through the iron door with a plasma torch, then tracks the hidden coordinates using a sonic compass.

Answer Key

The Whispering Canopy Heist

Culprit: Laura Dekker

plasma torch · sonic compass · left handed grip · cobweb strands · loud snake hisses

Trail: Start 21 → Clue 1 18 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Two-step equations): "THE TARGET DOES NOT USE A RADIO JAMMER"

$5x + 12 = 72, x = 12$ (T) · $2x + 12 = 30, x = 9$ (G) · $5x + 9 = 59, x = 10$ (J) · $2x + 11 = 45, x = 17$ (N) · $7x + 6 = 118, x = 16$ (S) · $3x + 8 = 41, x = 11$ (R) · $4x + 5 = 93, x = 22$ (M) · $6x + 4 = 52, x = 8$ (E) · $2x + 11 = 23, x = 6$ (A) · $7x + 6 = 27, x = 3$ (U) · $9x + 5 = 194, x = 21$ (D) · $2x + 2 = 10, x = 4$ (I) · $6x + 8 = 86, x = 13$ (H) · $4x + 11 = 39, x = 7$ (O)

Clue 2 (Exponents): "THE SUSPECT WRITES WITH A LEFT HANDED GRIP"

$6^2 = 36$ (T) · $21^2 = 441$ (L) · $10^2 = 100$ (E) · $3^6 = 729$ (U) · $2^2 = 4$ (D) · $9^2 = 81$ (H) · $16^2 = 256$ (F) · $19^2 = 361$ (A) · $14^2 = 196$ (I) · $5^3 = 125$ (W) · $3^5 = 243$ (P) · $11^2 = 121$ (S) · $5^2 = 25$ (N) · $2^5 = 32$ (G) · $12^2 = 144$ (C) · $7^3 = 343$ (R)

Clue 3 (Square roots): "THE CROOK RUNS FROM LOUD SNAKE HISSES"

$\sqrt{121} = 11$ (T) · $\sqrt{64} = 8$ (U) · $\sqrt{225} = 15$ (F) · $\sqrt{169} = 13$ (L) · $\sqrt{36} = 6$ (D) · $\sqrt{256} = 16$ (M) · $\sqrt{196} = 14$ (E) · $\sqrt{289} = 17$ (C) · $\sqrt{529} = 23$ (R) · $\sqrt{484} = 22$ (K) · $\sqrt{9} = 3$ (O) · $\sqrt{144} = 12$ (I) · $\sqrt{441} = 21$ (S) · $\sqrt{576} = 24$ (N) · $\sqrt{25} = 5$ (H) · $\sqrt{81} = 9$ (A)

Clue 4 (Integers): "WE FOUND COBWEB STRANDS ON THE WALL"

$(-8) + 33 = 25$ (W) · $(-11) + 13 = 2$ (S) · $(-2) + 9 = 7$ (E) · $(-11) + 28 = 17$ (L) · $12 - (-10) = 22$ (H) · $(-5) + 44 = 39$ (C) · $30 - (-10) = 40$ (T) · $(-9) + 46 = 37$ (D) · $(-3) + 35 = 32$ (R) · $(-7) + 19 = 12$ (F) · $9 - (-9) = 18$ (B) · $(-14) + 25 = 11$ (N) · $(-14) + 49 = 35$ (O) · $(-8) + 22 = 14$ (A) · $(-8) + 24 = 16$ (U)

Clue 5 (Two-step equations): surviving statement is box 12 → Laura Dekker

$2x + 9 = 19, x = 5$ · $9x + 12 = 111, x = 11$ · $7x + 7 = 49, x = 6$ · $2x + 1 = 21, x = 10$ · $6x + 11 = 65, x = 9$ · $8x + 8 = 32, x = 3$ · $5x + 5 = 25, x = 4$ · $7x + 4 = 60, x = 8$ · $7x + 6 = 13, x = 1$ · $5x + 7 = 17, x = 2$ · $8x + 3 = 59, x = 7$