



The Riddle of the Whispering Winds

Grade 7 math · Integers, Percentages, Order of operations, Exponents, Two-step equations · Reading level grades 7-9

Detective: _____ **Date:** _____

The priceless Golden Astrolabe has been stolen from the Sunken Temple! The thief bypassed our security and left a series of ancient math puzzles blocking the escape tunnels. We must decode the clues to identify the culprit before they sail away with 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	SURVIVAL BADGE	WRITE HAND	HAIR ACCENT	PHOBIA
Indiana Jones	laser decoder	ancient linguist	right handed	bright red hair	afraid of spiders
Tris Prior	solar torch	jungle survivalist	left handed	bright red hair	afraid of heights
Piper McLean	grappling hook	deep sea diver	right handed	bright red hair	afraid of water
Carmen Sandiego	sonic compass	ancient linguist	left handed	bright red hair	afraid of heights
Thomas Green	solar torch	cavern cartographer	right handed	ocean blue hair	afraid of spiders
Annabelle Chase	climbing picks	ancient linguist	right handed	ocean blue hair	afraid of heights
Ben Gates	sonic compass	cavern cartographer	right handed	ocean blue hair	afraid of spiders
Gale Hawthorne	solar torch	alpine trailblazer	left handed	bright red hair	afraid of water
Katniss Everdeen	sonic compass	deep sea diver	left handed	bright red hair	afraid of spiders
Lara Croft	solar torch	ancient linguist	left handed	bright red hair	afraid of spiders
Nathan Drake	grappling hook	alpine trailblazer	right handed	ocean blue hair	afraid of water
Percy Jackson	solar torch	cavern cartographer	left handed	bright red hair	afraid of spiders
Hazel Levesque	solar torch	jungle survivalist	right handed	ocean blue hair	afraid of heights
Sadie Kane	grappling hook	cavern cartographer	right handed	ocean blue hair	afraid of spiders
Carter Kane	solar torch	jungle survivalist	right handed	bright red hair	afraid of heights
Frank Zhang	climbing picks	alpine trailblazer	right handed	neon green hair	afraid of spiders
Peeta Mellark	sonic compass	cavern cartographer	left handed	bright red hair	afraid of spiders
Minho Leader	climbing picks	deep sea diver	left handed	bright red hair	afraid of spiders
Sam Temple	grappling hook	cavern cartographer	right handed	neon green hair	afraid of spiders
Sly Cooper	laser decoder	deep sea diver	left handed	ocean blue hair	afraid of spiders
Reyna Ramirez	laser decoder	alpine trailblazer	left handed	bright red hair	afraid of spiders

CLUE 1 Integers

To unlock the first security chamber, we must calculate the net change in altitude as we descend into the volcanic caves and climb back up the ancient steps.

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

T									T					T	
24	15	6	27	8	11	25	17	5	24	5	18	10	2	24	3
									T						
27	3	23	6	17	10	27	3	17	24	2	7	17	3	25	15

$19 - (-5) = \square \rightarrow \boxed{\text{T}}$	$9 - (-14) = \square \rightarrow \boxed{\text{V}}$	$13 - (-4) = \square \rightarrow \boxed{\text{R}}$
$14 - (-4) = \square \rightarrow \boxed{\text{S}}$	$(-2) + 12 = \square \rightarrow \boxed{\text{N}}$	$(-12) + 23 = \square \rightarrow \boxed{\text{L}}$
$(-10) + 16 = \square \rightarrow \boxed{\text{E}}$	$(-5) + 13 = \square \rightarrow \boxed{\text{U}}$	$(-7) + 9 = \square \rightarrow \boxed{\text{O}}$
$(-13) + 16 = \square \rightarrow \boxed{\text{A}}$	$1 - (-4) = \square \rightarrow \boxed{\text{I}}$	$(-15) + 42 = \square \rightarrow \boxed{\text{C}}$
$(-6) + 21 = \square \rightarrow \boxed{\text{H}}$	$(-12) + 37 = \square \rightarrow \boxed{\text{P}}$	$(-12) + 19 = \square \rightarrow \boxed{\text{G}}$

Scratch space:

CLUE 2 Percentages

The electronic gate is powered by a solar battery. We need to find what percentage of the charge remains after the thief drained the backup cells.

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

T						T													
6	41	12	7	12	17	6	41	35	50	51	43	35	57	40	57	12	51		
T						T													
6	5	5	24	12	50	6	41	12	45	35	40	7	6						

$10\% \text{ of } 60 = \square \rightarrow \boxed{\text{T}}$

$25\% \text{ of } 228 = \square \rightarrow \boxed{\text{S}}$

$50\% \text{ of } 34 = \square \rightarrow \boxed{\text{F}}$

$50\% \text{ of } 70 = \square \rightarrow \boxed{\text{A}}$

$60\% \text{ of } 75 = \square \rightarrow \boxed{\text{V}}$

$20\% \text{ of } 60 = \square \rightarrow \boxed{\text{E}}$

$10\% \text{ of } 50 = \square \rightarrow \boxed{\text{O}}$

$60\% \text{ of } 40 = \square \rightarrow \boxed{\text{P}}$

$25\% \text{ of } 164 = \square \rightarrow \boxed{\text{H}}$

$20\% \text{ of } 215 = \square \rightarrow \boxed{\text{W}}$

$25\% \text{ of } 160 = \square \rightarrow \boxed{\text{U}}$

$50\% \text{ of } 14 = \square \rightarrow \boxed{\text{L}}$

$25\% \text{ of } 200 = \square \rightarrow \boxed{\text{N}}$

$75\% \text{ of } 68 = \square \rightarrow \boxed{\text{D}}$

Scratch space:

CLUE 3

Order of operations

A stone dial blocks the pathway. To find the correct sequence of steps, we must evaluate the glyphs in the exact mathematical order of operations.

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

T								T											
34	77	9	106	116	6	48	34	9	23	26	9	78	23	6	17	25			48
				T															
19	116	48	54	34	101	7	54	19	26	9	33	106	116	78	9	6			

$8 \times 8 - 30 = \square \rightarrow \boxed{\text{T}}$

$8 + 8 \times 5 = \square \rightarrow \boxed{\text{A}}$

$4 \times 12 - 23 = \square \rightarrow \boxed{\text{M}}$

$98 + 2 \times 9 = \square \rightarrow \boxed{\text{I}}$

$50 + 7 \times 4 = \square \rightarrow \boxed{\text{D}}$

$8 \times 11 - 11 = \square \rightarrow \boxed{\text{H}}$

$5 \times 9 - 26 = \square \rightarrow \boxed{\text{G}}$

$5 + 2 \times 9 = \square \rightarrow \boxed{\text{F}}$

$5 + 2 \times 2 = \square \rightarrow \boxed{\text{E}}$

$9 \times 4 - 19 = \square \rightarrow \boxed{\text{O}}$

$6 \times 10 - 6 = \square \rightarrow \boxed{\text{N}}$

$37 + 8 \times 8 = \square \rightarrow \boxed{\text{J}}$

$94 + 4 \times 3 = \square \rightarrow \boxed{\text{P}}$

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

$9 + 4 \times 6 = \square \rightarrow \boxed{\text{S}}$

$3 \times 8 - 17 = \square \rightarrow \boxed{\text{U}}$

$4 \times 7 - 2 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 4 Exponents

The thief set a security laser grid that multiplies in complexity with every level. We must calculate the total beams using exponents to find a safe path through.

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

W																
4	27	256	32	196	8	125	343	216	25	81	9	400	64	25	27	125
16	64	25	343	8	125	216	121	64	400	27	125	32	32	25		

$2^2 = \square \rightarrow \text{W}$	$16^2 = \square \rightarrow \text{F}$	$5^2 = \square \rightarrow \text{R}$	$7^3 = \square \rightarrow \text{A}$
$3^2 = \square \rightarrow \text{G}$	$2^3 = \square \rightarrow \text{N}$	$14^2 = \square \rightarrow \text{U}$	$6^3 = \square \rightarrow \text{B}$
$3^3 = \square \rightarrow \text{E}$	$2^4 = \square \rightarrow \text{S}$	$3^4 = \square \rightarrow \text{I}$	$5^3 = \square \rightarrow \text{D}$
$20^2 = \square \rightarrow \text{H}$	$11^2 = \square \rightarrow \text{Y}$	$2^6 = \square \rightarrow \text{T}$	$2^5 = \square \rightarrow \text{O}$

Scratch space:

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

We found the rogue's discarded supply pack. By solving a two-step equation, we can determine the exact number of days they can survive on their remaining rations.

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:

$3x + 5 = 17, x = \boxed{}$

$6x + 7 = 43, x = \boxed{}$

$3x + 6 = 42, x = \boxed{}$

$4x + 3 = 47, x = \boxed{}$

$6x + 4 = 34, x = \boxed{}$

$2x + 5 = 21, x = \boxed{}$

$6x + 8 = 26, x = \boxed{}$

$2x + 1 = 3, x = \boxed{}$

$3x + 5 = 32, x = \boxed{}$

$3x + 1 = 22, x = \boxed{}$

$5x + 3 = 13, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain scaled the sheer rock wall with climbing picks, then escaped deep into the jungle canopy.
2. The villain bypassed the security grid with a laser decoder, then dove into the underground river.
3. The villain scaled the sheer rock wall with climbing picks, then mapped out a hidden pathway through the cave.
4. The villain scaled the sheer rock wall with climbing picks, then dove into the underground river.
5. The villain swung across the canyon using a grappling hook, then translated the ancient runes to find the exit.
6. The villain lit the dark cavern with a solar torch, then translated the ancient runes to find the exit.
7. The villain swung across the canyon using a grappling hook, then escaped deep into the jungle canopy.
8. The villain swung across the canyon using a grappling hook, then hiked over the freezing mountain pass.
9. The villain lit the dark cavern with a solar torch, then mapped out a hidden pathway through the cave.
10. The villain bypassed the security grid with a laser decoder, then hiked over the freezing mountain pass.
11. The villain navigated the foggy maze using a sonic compass, then escaped deep into the jungle canopy.
12. The villain navigated the foggy maze using a sonic compass, then dove into the underground river.

Answer Key

The Riddle of the Whispering Winds

Culprit: Reyna Ramirez

laser decoder · alpine trailblazer · left handed · bright red hair · afraid of spiders

Trail: Start 21 → Clue 1 15 → Clue 2 8 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Integers): "THE CULPRIT IS NOT A CAVERN CARTOGRAPHER"

$19 - (-5) = 24$ (T) · $9 - (-14) = 23$ (V) · $13 - (-4) = 17$ (R) · $14 - (-4) = 18$ (S) · $(-2) + 12 = 10$ (N) · $(-12) + 23 = 11$ (L) · $(-10) + 16 = 6$ (E) · $(-5) + 13 = 8$ (U) · $(-7) + 9 = 2$ (O) · $(-13) + 16 = 3$ (A) · $1 - (-4) = 5$ (I) · $(-15) + 42 = 27$ (C) · $(-6) + 21 = 15$ (H) · $(-12) + 37 = 25$ (P) · $(-12) + 19 = 7$ (G)

Clue 2 (Percentages): "THE LEFT HAND WAS USED TO OPEN THE VAULT"

10% of 60 = 6 (T) · 25% of 228 = 57 (S) · 50% of 34 = 17 (F) · 50% of 70 = 35 (A) · 60% of 75 = 45 (V) · 20% of 60 = 12 (E) · 10% of 50 = 5 (O) · 60% of 40 = 24 (P) · 25% of 164 = 41 (H) · 20% of 215 = 43 (W) · 25% of 160 = 40 (U) · 50% of 14 = 7 (L) · 25% of 200 = 50 (N) · 75% of 68 = 51 (D)

Clue 3 (Order of operations): "THE PIRATE FLED FROM A GIANT JUNGLE SPIDER"

$8 \times 8 - 30 = 34$ (T) · $8 + 8 \times 5 = 48$ (A) · $4 \times 12 - 23 = 25$ (M) · $98 + 2 \times 9 = 116$ (I) · $50 + 7 \times 4 = 78$ (D) · $8 \times 11 - 11 = 77$ (H) · $5 \times 9 - 26 = 19$ (G) · $5 + 2 \times 9 = 23$ (F) · $5 + 2 \times 2 = 9$ (E) · $9 \times 4 - 19 = 17$ (O) · $6 \times 10 - 6 = 54$ (N) · $37 + 8 \times 8 = 101$ (J) · $94 + 4 \times 3 = 106$ (P) · $2 + 2 \times 2 = 6$ (R) · $9 + 4 \times 6 = 33$ (S) · $3 \times 8 - 17 = 7$ (U) · $4 \times 7 - 2 = 26$ (L)

Clue 4 (Exponents): "WE FOUND A BRIGHT RED STRAND BY THE DOOR"

$2^2 = 4$ (W) · $16^2 = 256$ (F) · $5^2 = 25$ (R) · $7^3 = 343$ (A) · $3^2 = 9$ (G) · $2^3 = 8$ (N) · $14^2 = 196$ (U) · $6^3 = 216$ (B) · $3^3 = 27$ (E) · $2^4 = 16$ (S) · $3^4 = 81$ (I) · $5^3 = 125$ (D) · $20^2 = 400$ (H) · $11^2 = 121$ (Y) · $2^6 = 64$ (T) · $2^5 = 32$ (O)

Clue 5 (Two-step equations): surviving statement is box 10 → Reyna Ramirez

$3x + 5 = 17, x = 4$ · $6x + 7 = 43, x = 6$ · $3x + 6 = 42, x = 12$ · $4x + 3 = 47, x = 11$ · $6x + 4 = 34, x = 5$ · $2x + 5 = 21, x = 8$ · $6x + 8 = 26, x = 3$ · $2x + 1 = 3, x = 1$ · $3x + 5 = 32, x = 9$ · $3x + 1 = 22, x = 7$ · $5x + 3 = 13, x = 2$