



The Mystery of the Stolen Star-Pearl

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ Date: _____

When the glowing Star-Pearl vanished from the central vault of Coral Ridge Lagoon, the underwater council called in their top detective squad. Footprints in the sea sand and mysterious power surges left clues across the reef.

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 thief is _____

Possible suspects

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

NAME	OCEAN POWER	EQUIPMENT	DOMINANT FIN	HAIR COLOR	WEAKNESS
Nautilus	water shield	glow lantern	RIGHT HANDED	DEEP BLUE HAIR	LOUD SOUNDS
Cora	sonic wave	shell whistle	RIGHT HANDED	CORAL RED HAIR	LOUD SOUNDS
Muriel	sonic wave	glow lantern	RIGHT HANDED	SEA GREEN HAIR	LOUD SOUNDS
Marina	current control	pearl compass	LEFT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Glaucus	sonic wave	glow lantern	LEFT HANDED	DEEP BLUE HAIR	STRONG CURRENTS
Pearl	tidal blast	glow lantern	LEFT HANDED	CORAL RED HAIR	BRIGHT LIGHT
Coralia	water shield	kelp net	LEFT HANDED	CORAL RED HAIR	BRIGHT LIGHT
Nerida	coral shaping	shell whistle	LEFT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Kailani	tidal blast	kelp net	RIGHT HANDED	CORAL RED HAIR	STRONG CURRENTS
Ray	current control	pearl compass	LEFT HANDED	DEEP BLUE HAIR	STRONG CURRENTS
Caspian	sonic wave	pearl compass	LEFT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Ariel	tidal blast	kelp net	RIGHT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Urchin	tidal blast	silver trident	LEFT HANDED	DEEP BLUE HAIR	STRONG CURRENTS
Kai	water shield	silver trident	LEFT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Finnigan	tidal blast	shell whistle	RIGHT HANDED	DEEP BLUE HAIR	LOUD SOUNDS
Sireenna	tidal blast	shell whistle	LEFT HANDED	DEEP BLUE HAIR	LOUD SOUNDS
Callum	current control	glow lantern	LEFT HANDED	DEEP BLUE HAIR	BRIGHT LIGHT
Dylan	coral shaping	glow lantern	RIGHT HANDED	DEEP BLUE HAIR	LOUD SOUNDS
Oceanus	sonic wave	silver trident	LEFT HANDED	DEEP BLUE HAIR	STRONG CURRENTS
Triton	tidal blast	silver trident	LEFT HANDED	CORAL RED HAIR	STRONG CURRENTS
Maris	water shield	shell whistle	RIGHT HANDED	DEEP BLUE HAIR	LOUD SOUNDS

CLUE 1 Percentages

The Lagoon Patrol calculated what percentage of the vault locks were tampered with to reveal the first lead.

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

T									T							T
27	39	29	2	11	2	36	29	5	27	26	1	29	2	24	1	27

													T				
5	34	30	30	35	34	2	39	29	23	23	28	39	38	2	27	23	29

$20\% \text{ of } 135 = \square \rightarrow \text{T}$

$25\% \text{ of } 112 = \square \rightarrow \text{W}$

$60\% \text{ of } 65 = \square \rightarrow \text{H}$

$10\% \text{ of } 380 = \square \rightarrow \text{I}$

$60\% \text{ of } 50 = \square \rightarrow \text{R}$

$5\% \text{ of } 40 = \square \rightarrow \text{S}$

$20\% \text{ of } 145 = \square \rightarrow \text{E}$

$20\% \text{ of } 55 = \square \rightarrow \text{U}$

$5\% \text{ of } 720 = \square \rightarrow \text{P}$

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

$10\% \text{ of } 230 = \square \rightarrow \text{L}$

$25\% \text{ of } 20 = \square \rightarrow \text{C}$

$10\% \text{ of } 350 = \square \rightarrow \text{Y}$

$25\% \text{ of } 104 = \square \rightarrow \text{D}$

$25\% \text{ of } 4 = \square \rightarrow \text{O}$

$10\% \text{ of } 340 = \square \rightarrow \text{A}$

Scratch space:

CLUE 2 Exponents

To decipher an encrypted sonar signal, Guard Marina calculated exponential power increases from the hydro-beacons.

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

T										T									
81	324	16	8	64	8	27	16	343	81	289	100	256	81	16	8	128	196	400	
									T										
8	289	256	216	8	121	16	9	81	324	128	196	400	16	400					

$3^4 = \square \rightarrow$ T	$2^3 = \square \rightarrow$ S	$3^3 = \square \rightarrow$ P	$2^7 = \square \rightarrow$ A
$16^2 = \square \rightarrow$ I	$11^2 = \square \rightarrow$ L	$20^2 = \square \rightarrow$ D	$14^2 = \square \rightarrow$ N
$7^3 = \square \rightarrow$ C	$6^3 = \square \rightarrow$ M	$4^2 = \square \rightarrow$ E	$10^2 = \square \rightarrow$ R
$3^2 = \square \rightarrow$ F	$4^3 = \square \rightarrow$ U	$17^2 = \square \rightarrow$ W	$18^2 = \square \rightarrow$ H

Scratch space:

CLUE 3

Order of operations

Analyzing the multi-step security cipher required evaluating mathematical expressions using the proper order of operations.

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

T																			
31	70	40	9	80	52	52	21	80	17	65	21	24	20	52	80	17	11	40	11
							T												
20	22	20	6	80	28	70	31	52	80	28	70	31							

$11 \times 3 - 2 = \square \rightarrow \boxed{T}$

$43 + 3 \times 9 = \square \rightarrow \boxed{H}$

$22 + 5 \times 6 = \square \rightarrow \boxed{L}$

$59 + 7 \times 3 = \square \rightarrow \boxed{I}$

$8 \times 6 - 20 = \square \rightarrow \boxed{G}$

$9 \times 3 - 21 = \square \rightarrow \boxed{R}$

$8 + 8 \times 2 = \square \rightarrow \boxed{S}$

$5 \times 11 - 15 = \square \rightarrow \boxed{E}$

$9 + 3 \times 4 = \square \rightarrow \boxed{A}$

$1 + 5 \times 2 = \square \rightarrow \boxed{D}$

$10 \times 7 - 5 = \square \rightarrow \boxed{W}$

$9 \times 3 - 5 = \square \rightarrow \boxed{Y}$

$8 + 2 \times 6 = \square \rightarrow \boxed{B}$

$1 + 2 \times 4 = \square \rightarrow \boxed{V}$

$4 \times 10 - 23 = \square \rightarrow \boxed{N}$

Scratch space:

CLUE 4
Multiplication facts (1-12)

By counting equal rows of giant clams in the storage beds, the team multiplied to find the exact inventory.

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

F																
84	3	10	70	96	96	40	40	27	49	24	10	40	90	15	18	6

110	22	6	15	70	96	3	70	22	90	40	24	3	72	9		

$7 \times 12 = \square \rightarrow \text{F}$

$3 \times 9 = \square \rightarrow \text{P}$

$11 \times 2 = \square \rightarrow \text{T}$

$10 \times 7 = \square \rightarrow \text{N}$

$3 \times 6 = \square \rightarrow \text{I}$

$3 \times 1 = \square \rightarrow \text{O}$

$12 \times 6 = \square \rightarrow \text{C}$

$7 \times 7 = \square \rightarrow \text{B}$

$10 \times 4 = \square \rightarrow \text{E}$

$5 \times 3 = \square \rightarrow \text{A}$

$1 \times 9 = \square \rightarrow \text{K}$

$1 \times 6 = \square \rightarrow \text{R}$

$2 \times 5 = \square \rightarrow \text{U}$

$8 \times 12 = \square \rightarrow \text{D}$

$4 \times 6 = \square \rightarrow \text{L}$

$9 \times 10 = \square \rightarrow \text{H}$

$11 \times 10 = \square \rightarrow \text{S}$

Scratch space:

CLUE 5**Division facts (1-12) - the last clue**

Dividing the recovery zone into equal search grids for each swimmer narrowed down where the suspect hid.

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:

$63 \div 9 = \boxed{}$

$35 \div 7 = \boxed{}$

$6 \div 1 = \boxed{}$

$16 \div 4 = \boxed{}$

$11 \div 11 = \boxed{}$

$99 \div 9 = \boxed{}$

$8 \div 1 = \boxed{}$

$8 \div 4 = \boxed{}$

$9 \div 3 = \boxed{}$

$63 \div 7 = \boxed{}$

$12 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain raised a water shield, then checked directions on a pearl compass.
2. The villain unleashed a tidal blast, then swam away with a silver trident.
3. The villain used coral shaping magic, then lit the path with a glow lantern.
4. The villain used coral shaping magic, then signaled with a shell whistle.
5. The villain manipulated the current control, then checked directions on a pearl compass.
6. The villain raised a water shield, then swam away with a silver trident.
7. The villain sent out a sonic wave, then checked directions on a pearl compass.
8. The villain unleashed a tidal blast, then lit the path with a glow lantern.
9. The villain unleashed a tidal blast, then secured the stash in a kelp net.
10. The villain manipulated the current control, then lit the path with a glow lantern.
11. The villain raised a water shield, then lit the path with a glow lantern.
12. The villain raised a water shield, then signaled with a shell whistle.

Answer Key

The Mystery of the Stolen Star-Pearl

Culprit: Callum

current control · glow lantern · LEFT HANDED · DEEP BLUE HAIR · BRIGHT LIGHT

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE SUSPECT DOES NOT CARRY A SHELL WHISTLE"

20% of 135 = 27 (T) · 25% of 112 = 28 (W) · 60% of 65 = 39 (H) · 10% of 380 = 38 (I) · 60% of 50 = 30 (R) · 5% of 40 = 2 (S) · 20% of 145 = 29 (E) · 20% of 55 = 11 (U) · 5% of 720 = 36 (P) · 40% of 60 = 24 (N) · 10% of 230 = 23 (L) · 25% of 20 = 5 (C) · 10% of 350 = 35 (Y) · 25% of 104 = 26 (D) · 25% of 4 = 1 (O) · 10% of 340 = 34 (A)

Clue 2 (Exponents): "THE SUSPECT WRITES AND SWIMS LEFT HANDED"

$3^4 = 81$ (T) · $2^3 = 8$ (S) · $3^3 = 27$ (P) · $2^7 = 128$ (A) · $16^2 = 256$ (I) · $11^2 = 121$ (L) · $20^2 = 400$ (D) · $14^2 = 196$ (N) · $7^3 = 343$ (C) · $6^3 = 216$ (M) · $4^2 = 16$ (E) · $10^2 = 100$ (R) · $3^2 = 9$ (F) · $4^3 = 64$ (U) · $17^2 = 289$ (W) · $18^2 = 324$ (H)

Clue 3 (Order of operations): "THE VILLAIN WAS BLINDED BY BRIGHT LIGHT"

$11 \times 3 - 2 = 31$ (T) · $43 + 3 \times 9 = 70$ (H) · $22 + 5 \times 6 = 52$ (L) · $59 + 7 \times 3 = 80$ (I) · $8 \times 6 - 20 = 28$ (G) · $9 \times 3 - 21 = 6$ (R) · $8 + 8 \times 2 = 24$ (S) · $5 \times 11 - 15 = 40$ (E) · $9 + 3 \times 4 = 21$ (A) · $1 + 5 \times 2 = 11$ (D) · $10 \times 7 - 5 = 65$ (W) · $9 \times 3 - 5 = 22$ (Y) · $8 + 2 \times 6 = 20$ (B) · $1 + 2 \times 4 = 9$ (V) · $4 \times 10 - 23 = 17$ (N)

Clue 4 (Multiplication facts (1-12)): "FOUND DEEP BLUE HAIR STRAND ON THE LOCK"

$7 \times 12 = 84$ (F) · $3 \times 9 = 27$ (P) · $11 \times 2 = 22$ (T) · $10 \times 7 = 70$ (N) · $3 \times 6 = 18$ (I) · $3 \times 1 = 3$ (O) · $12 \times 6 = 72$ (C) · $7 \times 7 = 49$ (B) · $10 \times 4 = 40$ (E) · $5 \times 3 = 15$ (A) · $1 \times 9 = 9$ (K) · $1 \times 6 = 6$ (R) · $2 \times 5 = 10$ (U) · $8 \times 12 = 96$ (D) · $4 \times 6 = 24$ (L) · $9 \times 10 = 90$ (H) · $11 \times 10 = 110$ (S)

Clue 5 (Division facts (1-12)): surviving statement is box 10 → Callum

$63 \div 9 = 7$ · $35 \div 7 = 5$ · $6 \div 1 = 6$ · $16 \div 4 = 4$ · $11 \div 11 = 1$ · $99 \div 9 = 11$ · $8 \div 1 = 8$ · $8 \div 4 = 2$ · $9 \div 3 = 3$ · $63 \div 7 = 9$ · $12 \div 1 = 12$