



The Case of the Missing Golden Doubloon

Grade 9 math · Two-step equations, Exponents, Square roots, Integers · Reading level grades 1-2

Detective: _____ Date: _____

Someone stole the harbor master chest of gold! Solve the math clues to find out who took it.

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 Sneaky Pirate is _____

Possible suspects

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

NAME	PIRATE WEAPON	PIRATE FLAG	BANDANA KNOT	BEARD COLOR	FEAR
Mary Read	Cannon Ball	Crossbone Flag	Left Tied	Black Beard	Afraid Of Water
Boatsman Bob	Hook Hand	Kraken Flag	Left Tied	Grey Beard	Afraid Of Water
Scurvy Sid	Cannon Ball	Shark Flag	Right Tied	Black Beard	Afraid Of Parrots
Anne Bonny	Cutlass	Skull Flag	Left Tied	Black Beard	Afraid Of Cats
Calico Jack	Hook Hand	Dragon Flag	Left Tied	Red Beard	Afraid Of Parrots
Captain Kidd	Cutlass	Shark Flag	Left Tied	Grey Beard	Afraid Of Parrots
Blackbeard	Wooden Sword	Dragon Flag	Left Tied	Grey Beard	Afraid Of Water
Barnacle Bill	Cutlass	Kraken Flag	Right Tied	Grey Beard	Afraid Of Water
Quartermaster Quinn	Cutlass	Skull Flag	Left Tied	Grey Beard	Afraid Of Water
Lookout Lou	Cutlass	Skull Flag	Right Tied	Black Beard	Afraid Of Parrots
Navigator Ned	Cutlass	Crossbone Flag	Left Tied	Red Beard	Afraid Of Cats
Cannonball Carl	Cutlass	Kraken Flag	Right Tied	Grey Beard	Afraid Of Parrots
Pegleg Pete	Wooden Sword	Crossbone Flag	Right Tied	Black Beard	Afraid Of Water
Iron Hook Ike	Cannon Ball	Shark Flag	Left Tied	Grey Beard	Afraid Of Water
Patchy Pete	Rope Lasso	Shark Flag	Left Tied	Black Beard	Afraid Of Cats
Jolly Roger	Wooden Sword	Dragon Flag	Right Tied	Red Beard	Afraid Of Water
Stormy Sue	Wooden Sword	Kraken Flag	Left Tied	Red Beard	Afraid Of Parrots
Long John	Rope Lasso	Dragon Flag	Left Tied	Grey Beard	Afraid Of Parrots
Redbeard	Cannon Ball	Skull Flag	Right Tied	Grey Beard	Afraid Of Water
Captain Flint	Cutlass	Kraken Flag	Right Tied	Black Beard	Afraid Of Cats
First Mate Faye	Cannon Ball	Skull Flag	Left Tied	Grey Beard	Afraid Of Water

CLUE 1
Two-step equations

A locked treasure box has two dials. Solve to open it and read the clue.

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

T																		
12	20	9	18	19	9	6	14	17	4	16	11	6	12	9	15	21	9	18

19	21	12	3	8	17	6	18	20	6	11	14	3	8	6	10			

$7x + 2 = 86, x = \square \rightarrow \text{[T]}$

$8x + 5 = 133, x = \square \rightarrow \text{[I]}$

$2x + 12 = 32, x = \square \rightarrow \text{[G]}$

$4x + 9 = 81, x = \square \rightarrow \text{[S]}$

$8x + 12 = 164, x = \square \rightarrow \text{[N]}$

$6x + 6 = 132, x = \square \rightarrow \text{[O]}$

$8x + 5 = 93, x = \square \rightarrow \text{[R]}$

$7x + 1 = 120, x = \square \rightarrow \text{[Y]}$

$4x + 1 = 57, x = \square \rightarrow \text{[K]}$

$6x + 9 = 99, x = \square \rightarrow \text{[D]}$

$2x + 2 = 8, x = \square \rightarrow \text{[F]}$

$5x + 1 = 41, x = \square \rightarrow \text{[L]}$

$3x + 11 = 29, x = \square \rightarrow \text{[A]}$

$4x + 2 = 38, x = \square \rightarrow \text{[E]}$

$5x + 3 = 23, x = \square \rightarrow \text{[P]}$

$2x + 8 = 48, x = \square \rightarrow \text{[H]}$

Scratch space:

CLUE 2 Exponents

The ship flag has a code that grows in powers. Solve it to see the pattern.

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

T											T					T					
27	128	243	324	216	256	256	169	216	4	27	216	243	343	27	128	243	216	9			
										T									T		
125	169	4	343	169	4	169	289	4	27	128	243	256	243	225	27						

$3^3 = \square \rightarrow \text{T}$	$5^3 = \square \rightarrow \text{B}$	$18^2 = \square \rightarrow \text{V}$	$17^2 = \square \rightarrow \text{O}$
$15^2 = \square \rightarrow \text{F}$	$2^7 = \square \rightarrow \text{H}$	$7^3 = \square \rightarrow \text{D}$	$3^5 = \square \rightarrow \text{E}$
$6^3 = \square \rightarrow \text{I}$	$3^2 = \square \rightarrow \text{R}$	$13^2 = \square \rightarrow \text{A}$	$4^4 = \square \rightarrow \text{L}$
$2^2 = \square \rightarrow \text{N}$			

Scratch space:

CLUE 3 Square roots

The map has a square grid of islands. Solve to find the side length clue.

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

T																		T
4	12	8	2	13	19	19	3	13	11	18	17	20	19	16	11	17	4	
		T			T		T					T						
5	8	4	13	11	4	17	4	12	8	18	3	4	8	14				

$\sqrt{16} = \square \rightarrow \boxed{\text{T}}$

$\sqrt{361} = \square \rightarrow \boxed{\text{L}}$

$\sqrt{4} = \square \rightarrow \boxed{\text{V}}$

$\sqrt{400} = \square \rightarrow \boxed{\text{U}}$

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

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

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

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

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

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

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

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

$\sqrt{324} = \square \rightarrow \boxed{\text{W}}$

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

Scratch space:

CLUE 4 Integers

The ship log tracks gains and losses of gold coins. Solve to find the total.

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

A								A						A					A	
12	13	8	36	34	2	36	12	8	31	9	12	38	8	33	12	5				

17	14	7	4	31	14	4	40	9	36	31	36	39	18

$9 - (-3) = \boxed{} \rightarrow \boxed{\text{A}}$

$(-14) + 45 = \boxed{} \rightarrow \boxed{\text{D}}$

$10 - (-8) = \boxed{} \rightarrow \boxed{\text{K}}$

$(-10) + 17 = \boxed{} \rightarrow \boxed{\text{U}}$

$(-14) + 16 = \boxed{} \rightarrow \boxed{\text{B}}$

$(-8) + 21 = \boxed{} \rightarrow \boxed{\text{G}}$

$(-6) + 40 = \boxed{} \rightarrow \boxed{\text{Y}}$

$(-15) + 24 = \boxed{} \rightarrow \boxed{\text{H}}$

$(-3) + 11 = \boxed{} \rightarrow \boxed{\text{R}}$

$(-6) + 42 = \boxed{} \rightarrow \boxed{\text{E}}$

$(-14) + 53 = \boxed{} \rightarrow \boxed{\text{C}}$

$14 - (-3) = \boxed{} \rightarrow \boxed{\text{F}}$

$31 - (-2) = \boxed{} \rightarrow \boxed{\text{W}}$

$(-11) + 15 = \boxed{} \rightarrow \boxed{\text{N}}$

$(-3) + 43 = \boxed{} \rightarrow \boxed{\text{T}}$

$(-7) + 12 = \boxed{} \rightarrow \boxed{\text{S}}$

$32 - (-6) = \boxed{} \rightarrow \boxed{\text{I}}$

$(-15) + 29 = \boxed{} \rightarrow \boxed{\text{O}}$

Scratch space:

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

The captain compass needs two steps to unlock. Solve it for the final clue.

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:

$2x + 12 = 28, x = \boxed{}$

$7x + 9 = 23, x = \boxed{}$

$4x + 1 = 13, x = \boxed{}$

$8x + 11 = 91, x = \boxed{}$

$5x + 4 = 24, x = \boxed{}$

$7x + 10 = 59, x = \boxed{}$

$8x + 12 = 84, x = \boxed{}$

$7x + 7 = 42, x = \boxed{}$

$7x + 12 = 19, x = \boxed{}$

$2x + 8 = 30, x = \boxed{}$

$7x + 6 = 48, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain brandished a wooden sword, then hoisted a kraken flag.
2. The villain brandished a wooden sword, then hoisted a dragon flag.
3. The villain rolled a cannon ball, then hoisted a skull flag.
4. The villain swung a rope lasso, then hoisted a dragon flag.
5. The villain swung a cutlass, then hoisted a dragon flag.
6. The villain waved a hook hand, then hoisted a crossbone flag.
7. The villain waved a hook hand, then hoisted a skull flag.
8. The villain swung a cutlass, then hoisted a skull flag.
9. The villain brandished a wooden sword, then hoisted a shark flag.
10. The villain waved a hook hand, then hoisted a dragon flag.
11. The villain swung a cutlass, then hoisted a crossbone flag.
12. The villain waved a hook hand, then hoisted a kraken flag.

Answer Key

The Case of the Missing Golden Doubloon

Culprit: Boatsman Bob

Hook Hand · Kraken Flag · Left Tied · Grey Beard · Afraid Of Water

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Two-step equations): "THE SNEAKY PIRATE DOES NOT FLY A SHARK FLAG"

$7x + 2 = 86$, $x = 12$ (T) · $8x + 5 = 133$, $x = 16$ (I) · $2x + 12 = 32$, $x = 10$ (G) · $4x + 9 = 81$, $x = 18$ (S) · $8x + 12 = 164$, $x = 19$ (N) · $6x + 6 = 132$, $x = 21$ (O) · $8x + 5 = 93$, $x = 11$ (R) · $7x + 1 = 120$, $x = 17$ (Y) · $4x + 1 = 57$, $x = 14$ (K) · $6x + 9 = 99$, $x = 15$ (D) · $2x + 2 = 8$, $x = 3$ (F) · $5x + 1 = 41$, $x = 8$ (L) · $3x + 11 = 29$, $x = 6$ (A) · $4x + 2 = 38$, $x = 9$ (E) · $5x + 3 = 23$, $x = 4$ (P) · $2x + 8 = 48$, $x = 20$ (H)

Clue 2 (Exponents): "THE VILLAIN TIED THEIR BANDANA ON THE LEFT"

$3^3 = 27$ (T) · $5^3 = 125$ (B) · $18^2 = 324$ (V) · $17^2 = 289$ (O) · $15^2 = 225$ (F) · $2^7 = 128$ (H) · $7^3 = 343$ (D) · $3^5 = 243$ (E) · $6^3 = 216$ (I) · $3^2 = 9$ (R) · $13^2 = 169$ (A) · $4^4 = 256$ (L) · $2^2 = 4$ (N)

Clue 3 (Square roots): "THE VILLAIN WOULD NOT GET INTO THE WATER"

$\sqrt{16} = 4$ (T) · $\sqrt{361} = 19$ (L) · $\sqrt{4} = 2$ (V) · $\sqrt{400} = 20$ (U) · $\sqrt{64} = 8$ (E) · $\sqrt{169} = 13$ (I) · $\sqrt{121} = 11$ (N) · $\sqrt{9} = 3$ (A) · $\sqrt{144} = 12$ (H) · $\sqrt{196} = 14$ (R) · $\sqrt{289} = 17$ (O) · $\sqrt{256} = 16$ (D) · $\sqrt{324} = 18$ (W) · $\sqrt{25} = 5$ (G)

Clue 4 (Integers): "A GREY BEARD HAIR WAS FOUND ON THE DECK"

$9 - (-3) = 12$ (A) · $(-14) + 45 = 31$ (D) · $10 - (-8) = 18$ (K) · $(-10) + 17 = 7$ (U) · $(-14) + 16 = 2$ (B) · $(-8) + 21 = 13$ (G) · $(-6) + 40 = 34$ (Y) · $(-15) + 24 = 9$ (H) · $(-3) + 11 = 8$ (R) · $(-6) + 42 = 36$ (E) · $(-14) + 53 = 39$ (C) · $14 - (-3) = 17$ (F) · $31 - (-2) = 33$ (W) · $(-11) + 15 = 4$ (N) · $(-3) + 43 = 40$ (T) · $(-7) + 12 = 5$ (S) · $32 - (-6) = 38$ (I) · $(-15) + 29 = 14$ (O)

Clue 5 (Two-step equations): surviving statement is box 12 → Boatsman Bob

$2x + 12 = 28$, $x = 8$ · $7x + 9 = 23$, $x = 2$ · $4x + 1 = 13$, $x = 3$ · $8x + 11 = 91$, $x = 10$ · $5x + 4 = 24$, $x = 4$ · $7x + 10 = 59$, $x = 7$ · $8x + 12 = 84$, $x = 9$ · $7x + 7 = 42$, $x = 5$ · $7x + 12 = 19$, $x = 1$ · $2x + 8 = 30$, $x = 11$ · $7x + 6 = 48$, $x = 6$