



The Lost Compass of Cutlass Cay

Grade 10 math · Rounding, Bar models, Word problems, Multiplication, Fractions of a number · Reading level grades 7-9

Detective: _____ **Date:** _____

The harbor master's ancient golden compass has been stolen from the high tower of Smuggler's Cove! A rogue captain slipped through the fog, bypassed the guards, and fled into the night. We must decipher the clues left behind to identify the thief before they sail beyond the horizon.

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 captain 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	SAILING SKILL	DUELING STANCE	HAIR STYLE	SCURVY WEAKNESS
Woodes Rogers	heavy cutlass	cannon aiming	left handed stance	fiery red braids	seasickness
Charles Vane	flintlock pistol	map navigation	right handed stance	pitch black beard	fear of parrots
Calico Jack	spyglass map	map navigation	right handed stance	sun bleached dreads	sour limes
Howell Davis	heavy cutlass	cannon aiming	left handed stance	pitch black beard	fear of parrots
Rachel Wall	heavy cutlass	stealth rowing	right handed stance	pitch black beard	fear of parrots
Bartholomew Roberts	heavy cutlass	map navigation	left handed stance	fiery red braids	sour limes
Samuel Bellamy	flintlock pistol	rigging climbing	left handed stance	sun bleached dreads	seasickness
Edward Low	flintlock pistol	cannon aiming	right handed stance	pitch black beard	fear of parrots
Grace O Malley	spyglass map	map navigation	left handed stance	sun bleached dreads	seasickness
Richard Worley	boarding axe	rigging climbing	left handed stance	pitch black beard	fear of parrots
Thomas Tew	smoke canister	map navigation	right handed stance	sun bleached dreads	fear of parrots
Henry Morgan	boarding axe	map navigation	right handed stance	pitch black beard	sour limes
Edward England	smoke canister	stealth rowing	left handed stance	fiery red braids	sour limes
Charlotte de Berry	boarding axe	cannon aiming	left handed stance	sun bleached dreads	sour limes
Francois l Olonnais	spyglass map	anchor dropping	right handed stance	pitch black beard	fear of parrots
Blackbeard	spyglass map	cannon aiming	left handed stance	sun bleached dreads	seasickness
Mary Read	flintlock pistol	cannon aiming	right handed stance	sun bleached dreads	fear of parrots
Stede Bonnet	smoke canister	rigging climbing	right handed stance	pitch black beard	seasickness
Francis Drake	spyglass map	anchor dropping	left handed stance	fiery red braids	sour limes
Anne Bonny	spyglass map	rigging climbing	right handed stance	pitch black beard	fear of parrots
Sadie the Goat	heavy cutlass	map navigation	right handed stance	sun bleached dreads	sour limes

CLUE 1 Rounding

A frantic dockworker found a torn logbook. Solve these word problems about cargo weight to reveal the first clue.

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

T			T											T			
200	2300	3700	200	2300	430	3700	1100	2000	9000	3700	70	50	9000	200	4300	70	3700
5000	50	230	2300	9000	90	2000	90	9000	700	700	430	50	1300				

Round 231 to the nearest hundred → **T**

Round 9,222 to the nearest thousand → **O**

Round 4,338 to the nearest hundred → **U**

Round 1,142 to the nearest hundred → **F**

Round 91 to the nearest ten → **R**

Round 667 to the nearest hundred → **P**

Round 71 to the nearest ten → **S**

Round 49 to the nearest ten → **N**

Round 228 to the nearest ten → **C**

Round 3,732 to the nearest hundred → **E**

Round 5,375 to the nearest thousand → **A**

Round 428 to the nearest ten → **I**

Round 2,307 to the nearest hundred → **H**

Round 1,522 to the nearest thousand → **D**

Round 1,344 to the nearest hundred → **G**

Scratch space:

CLUE 2

Bar model word problems

The guards compared the lengths of stolen ropes. Complete the bar models to uncover the next lead.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

R									D	E	D	S					C	E
41	12	55	7	142	7	45	18					142	45	18				

Quartermaster shares 205 canvas sails equally among 5 teams. How many canvas sails does each team get?

draw a bar model

Answer: → **R**

The red team has 42 canvas sails and the blue team has 35 canvas sails. How many more canvas sails does the red team have?

draw a bar model

Answer: → **H**

One group collected 109 iron anchors and another group collected 33 iron anchors. How many iron anchors in all?

draw a bar model

Answer: → **T**

One group collected 11 iron anchors and another group collected 1 iron anchors. How many iron anchors in all?

draw a bar model

Answer: → **I**

There were 60 wooden barrels in all. 15 wooden barrels were used. How many wooden barrels are left?

draw a bar model

Answer: → **A**

There were 78 iron anchors in all. 23 iron anchors were used. How many iron anchors are left?

draw a bar model

Answer: → **G**

Quartermaster has 2 times as many canvas sails as a teammate. The teammate has 9 canvas sails. How many canvas sails does quartermaster have?

draw a bar model

Answer: → **N**

CLUE 3

Word problems

The lighthouse radar only shows rounded sea distances. Round these navigation coordinates to unlock the third hint.

Solve each problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with F F S .

104 100 50 43 16 104 101 50 43 43 16 48

Quartermaster found 52 gold coins yesterday and 52 more today. How many gold coins in all?

Answer: → F

Quartermaster lined up 10 rows of 5 gold coins. How many gold coins in all?

Answer: → A

There were 133 iron anchors. 32 were used up. How many iron anchors are left?

Answer: → P

Quartermaster lined up 4 rows of 4 pirate hats. How many pirate hats in all?

Answer: → O

Quartermaster lined up 10 rows of 10 gold coins. How many gold coins in all?

Answer: → E

Quartermaster lined up 4 rows of 12 wooden barrels. How many wooden barrels in all?

Answer: → T

Quartermaster found 21 canvas sails yesterday and 22 more today. How many canvas sails in all?

Answer: → R

Scratch space:

CLUE 4

Multiplication facts (1-12)

Rows of gunpowder barrels are stacked in the hold. Multiply the rows to find the hidden cipher.

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

W																		
70	10	18	63	48	80	7	5	20	9	32	40	4	81	144	9	80	7	4
63	80	81	100	10	144	44	28	28	44	80	28							

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

$8 \times 10 = \square \rightarrow \text{N}$

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

$5 \times 1 = \square \rightarrow \text{B}$

$4 \times 5 = \square \rightarrow \text{L}$

$11 \times 4 = \square \rightarrow \text{I}$

$1 \times 4 = \square \rightarrow \text{S}$

$12 \times 12 = \square \rightarrow \text{R}$

$10 \times 1 = \square \rightarrow \text{E}$

$1 \times 7 = \square \rightarrow \text{D}$

$4 \times 7 = \square \rightarrow \text{G}$

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

$9 \times 7 = \square \rightarrow \text{O}$

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

$6 \times 8 = \square \rightarrow \text{U}$

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

$8 \times 4 = \square \rightarrow \text{C}$

$9 \times 9 = \square \rightarrow \text{T}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

The quartermaster is dividing the gold coins. Find the fractions of the treasure to secure the final piece of evidence.

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:

$3/5 \text{ of } 20 = \boxed{}$

$4/6 \text{ of } 6 = \boxed{}$

$3/6 \text{ of } 2 = \boxed{}$

$7/8 \text{ of } 8 = \boxed{}$

$1/4 \text{ of } 20 = \boxed{}$

$2/6 \text{ of } 18 = \boxed{}$

$2/6 \text{ of } 6 = \boxed{}$

$2/6 \text{ of } 24 = \boxed{}$

$2/10 \text{ of } 50 = \boxed{}$

$3/10 \text{ of } 10 = \boxed{}$

$2/8 \text{ of } 36 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain unfolded a spyglass map, then escaped by rigging climbing.
2. The villain swung a heavy cutlass, then paused for anchor dropping.
3. The villain fired a flintlock pistol, then escaped by rigging climbing.
4. The villain fired a flintlock pistol, then used map navigation to escape.
5. The villain swung a boarding axe, then used map navigation to escape.
6. The villain unfolded a spyglass map, then escaped by stealth rowing.
7. The villain swung a boarding axe, then fled after cannon aiming.
8. The villain threw a smoke canister, then used map navigation to escape.
9. The villain swung a boarding axe, then escaped by rigging climbing.
10. The villain swung a heavy cutlass, then escaped by rigging climbing.
11. The villain fired a flintlock pistol, then fled after cannon aiming.
12. The villain swung a heavy cutlass, then escaped by stealth rowing.

Answer Key

The Lost Compass of Cutlass Cay

Culprit: Edward Low

flintlock pistol · cannon aiming · right handed stance · pitch black beard · fear of parrots

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE THIEF DOES NOT USE ANCHOR DROPPING"

Round 231 to the nearest hundred = 200 (T) · Round 9,222 to the nearest thousand = 9000 (O) · Round 4,338 to the nearest hundred = 4300 (U) · Round 1,142 to the nearest hundred = 1100 (F) · Round 91 to the nearest ten = 90 (R) · Round 667 to the nearest hundred = 700 (P) · Round 71 to the nearest ten = 70 (S) · Round 49 to the nearest ten = 50 (N) · Round 228 to the nearest ten = 230 (C) · Round 3,732 to the nearest hundred = 3700 (E) · Round 5,375 to the nearest thousand = 5000 (A) · Round 428 to the nearest ten = 430 (I) · Round 2,307 to the nearest hundred = 2300 (H) · Round 1,522 to the nearest thousand = 2000 (D) · Round 1,344 to the nearest hundred = 1300 (G)

Clue 2 (Bar model word problems): "RIGHT HANDED STANCE"

Quartermaster shares 205 canvas sails equally among 5 teams. How many canvas sails does each team get? = 41 (R) · The red team has 42 canvas sails and the blue team has 35 canvas sails. How many more canvas sails does the red team have? = 7 (H) · One group collected 109 iron anchors and another group collected 33 iron anchors. How many iron anchors in all? = 142 (T) · One group collected 11 iron anchors and another group collected 1 iron anchors. How many iron anchors in all? = 12 (I) · There were 60 wooden barrels in all. 15 wooden barrels were used. How many wooden barrels are left? = 45 (A) · There were 78 iron anchors in all. 23 iron anchors were used. How many iron anchors are left? = 55 (G) · Quartermaster has 2 times as many canvas sails as a teammate. The teammate has 9 canvas sails. How many canvas sails does quartermaster have? = 18 (N)

Clue 3 (Word problems): "FEAR OF PARROTS"

Quartermaster found 52 gold coins yesterday and 52 more today. How many gold coins in all? = 104 (F) · Quartermaster lined up 10 rows of 5 gold coins. How many gold coins in all? = 50 (A) · There were 133 iron anchors. 32 were used up. How many iron anchors are left? = 101 (P) · Quartermaster lined up 4 rows of 4 pirate hats. How many pirate hats in all? = 16 (O) · Quartermaster lined up 10 rows of 10 gold coins. How many gold coins in all? = 100 (E) · Quartermaster lined up 4 rows of 12 wooden barrels. How many wooden barrels in all? = 48 (T) · Quartermaster found 21 canvas sails yesterday and 22 more today. How many canvas sails in all? = 43 (R)

Clue 4 (Multiplication facts (1-12)): "WE FOUND BLACK STRANDS ON THE RIGGING"

$10 \times 7 = 70$ (W) · $8 \times 10 = 80$ (N) · $3 \times 6 = 18$ (F) · $5 \times 1 = 5$ (B) · $4 \times 5 = 20$ (L) · $11 \times 4 = 44$ (I) · $1 \times 4 = 4$ (S) · $12 \times 12 = 144$ (R) · $10 \times 1 = 10$ (E) · $1 \times 7 = 7$ (D) · $4 \times 7 = 28$ (G) · $10 \times 10 = 100$ (H) · $9 \times 7 = 63$ (O) · $9 \times 1 = 9$ (A) · $6 \times 8 = 48$ (U) · $4 \times 10 = 40$ (K) · $8 \times 4 = 32$ (C) · $9 \times 9 = 81$ (T)

Clue 5 (Fractions of a number): surviving statement is box 11 → Edward Low

$3/5$ of 20 = 12 · $4/6$ of 6 = 4 · $3/6$ of 2 = 1 · $7/8$ of 8 = 7 · $1/4$ of 20 = 5 · $2/6$ of 18 = 6 · $2/6$ of 6 = 2 · $2/6$ of 24 = 8 · $2/10$ of 50 = 10 · $3/10$ of 10 = 3 · $2/8$ of 36 = 9