



The Mystery of the Golden Anchor

Grade 10 math · Fractions of a number, Word problems, Bar models, Rounding · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone has stolen the Governor's shiny Golden Anchor! The harbor is locked down. Only the cleverest deckhand can solve the clues, find the true pirate thief, and save the day before they sail away.

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 pirate thief is _____

Possible suspects

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

NAME	MAIN SKILL	SPECIAL TALENT	PHYSICAL TELL	HAIR COLOR	SECRET WEAKNESS
Jack Rackham	Map Reading	Treasure Hunting	Right Handed	Red Hair	Easily Distracted
William Dampier	Ship Sailing	Treasure Hunting	Right Handed	Black Hair	Ticklish Feet
Anne Bonny	Cannon Blasting	Sea Shanty Singing	Left Handed	Black Hair	Ticklish Feet
Captain Kidd	Map Reading	Knot Tying	Right Handed	Black Hair	Easily Distracted
Calico Jack	Rope Swinging	Sea Shanty Singing	Left Handed	Black Hair	Easily Distracted
Charles Vane	Sword Fighting	Plank Walking	Left Handed	Gray Hair	Easily Distracted
Henry Morgan	Rope Swinging	Treasure Hunting	Right Handed	Gray Hair	Ticklish Feet
Samuel Bellamy	Sword Fighting	Treasure Hunting	Left Handed	Black Hair	Easily Distracted
Francis Drake	Map Reading	Parrot Training	Left Handed	Black Hair	Easily Distracted
Christopher Condent	Cannon Blasting	Treasure Hunting	Left Handed	Gray Hair	Easily Distracted
Grace OMalley	Cannon Blasting	Parrot Training	Left Handed	Black Hair	Easily Distracted
Jean Lafitte	Rope Swinging	Sea Shanty Singing	Right Handed	Black Hair	Easily Distracted
Thomas Tew	Ship Sailing	Parrot Training	Right Handed	Black Hair	Afraid of Sharks
Stede Bonnet	Map Reading	Sea Shanty Singing	Right Handed	Red Hair	Afraid of Sharks
Richard Worley	Ship Sailing	Parrot Training	Left Handed	Gray Hair	Ticklish Feet
Sadie the Goat	Map Reading	Treasure Hunting	Right Handed	Gray Hair	Easily Distracted
Howell Davis	Cannon Blasting	Sea Shanty Singing	Left Handed	Gray Hair	Afraid of Sharks
Bartholomew Roberts	Sword Fighting	Knot Tying	Right Handed	Gray Hair	Afraid of Sharks
Edward England	Rope Swinging	Sea Shanty Singing	Left Handed	Gray Hair	Ticklish Feet
Mary Read	Ship Sailing	Plank Walking	Left Handed	Black Hair	Easily Distracted
Charlotte de Berry	Cannon Blasting	Plank Walking	Left Handed	Red Hair	Ticklish Feet

CLUE 1
Fractions of a number

First Mate Barnaby splits a chest of silver coins into equal piles to see how many the crew took.

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

T								T									T
42	59	6	34	31	52	14	42	6	24	26	6	44	28	26	42		
59	14	27	6	34	15	14	28	5	32	14	15	5	31	28	43		

$4/6 \text{ of } 63 = \square \rightarrow \boxed{\text{T}}$

$2/8 \text{ of } 56 = \square \rightarrow \boxed{\text{A}}$

$2/3 \text{ of } 51 = \square \rightarrow \boxed{\text{P}}$

$3/6 \text{ of } 104 = \square \rightarrow \boxed{\text{R}}$

$5/10 \text{ of } 52 = \square \rightarrow \boxed{\text{O}}$

$2/8 \text{ of } 60 = \square \rightarrow \boxed{\text{L}}$

$1/3 \text{ of } 177 = \square \rightarrow \boxed{\text{H}}$

$5/8 \text{ of } 8 = \square \rightarrow \boxed{\text{K}}$

$1/4 \text{ of } 24 = \square \rightarrow \boxed{\text{E}}$

$1/6 \text{ of } 192 = \square \rightarrow \boxed{\text{W}}$

$3/10 \text{ of } 90 = \square \rightarrow \boxed{\text{V}}$

$5/10 \text{ of } 86 = \square \rightarrow \boxed{\text{G}}$

$6/8 \text{ of } 32 = \square \rightarrow \boxed{\text{D}}$

$8/10 \text{ of } 55 = \square \rightarrow \boxed{\text{S}}$

$4/5 \text{ of } 35 = \square \rightarrow \boxed{\text{N}}$

$2/8 \text{ of } 124 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

CLUE 2

Word problems

We count the empty rum barrels and gunpowder crates left behind on the wooden dock.

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

A witness saw the villain was L D D .

40 43 73 110 26 14 63 43

Quartermaster Higgins lined up 4 rows of 10 hardtack biscuits. How many hardtack biscuits in all?

Answer: → L

Quartermaster Higgins found 19 coconuts yesterday and 7 more today. How many coconuts in all?

Answer: → H

Quartermaster Higgins lined up 11 rows of 10 spyglasses. How many spyglasses in all?

Answer: → T

Quartermaster Higgins lined up 2 rows of 7 hardtack biscuits. How many hardtack biscuits in all?

Answer: → A

There were 83 doubloons. 10 were used up. How many doubloons are left?

Answer: → F

Quartermaster Higgins lined up 9 rows of 7 spyglasses. How many spyglasses in all?

Answer: → N

There were 77 cannonballs. 34 were used up. How many cannonballs are left?

Answer: → E

Scratch space:

CLUE 3 Bar model word problems

The shipwright compares the lengths of the broken deck planks side by side to find the damage.

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

Someone scared the villain off with

Diagram of a 16-bit register with 16 slots. The 1st slot contains 'E' (orange), 2nd is empty, 3rd contains '62', 4th contains '110', 5th contains '29', 6th contains '114', 7th is empty, 8th contains '72', 9th contains '110', 10th contains '62', 11th contains 'T' (tan), 12th contains 'R' (tan), 13th is empty, 14th contains '98', 15th contains 'C' (tan), 16th contains 'T' (tan), 17th contains 'E' (orange), 18th is empty, 19th contains '94', 20th contains '72'.

Quartermaster Higgins shares 188 hardtack biscuits equally among 2 teams. How many hardtack biscuits does each team get?

draw a bar model

Answer: → **E**

One group collected 81 hardtack biscuits and another group collected 33 hardtack biscuits. How many hardtack biscuits in all?

draw a bar model

Answer: → **Y**

Quartermaster Higgins has 145 doubloons, packed 5 to a bag. How many bags can be filled?

draw a bar model

Answer: → **L**

There were 107 coconuts in all. 9 coconuts were used. How many coconuts are left?

draw a bar model

Answer: → **A**

One group collected 41 doubloons and another group collected 69 doubloons. How many doubloons in all?

draw a bar model

Answer: →

Quartermaster Higgins has 216 hardtack biscuits, packed 3 to a bag. How many bags can be filled?

draw a bar model

Answer: → **D**

The red team has 70 doubloons and the blue team has 8 doubloons. How many more doubloons does the red team have?

draw a bar model

Answer: → **S**

CLUE 4 Rounding

The lookouts look through their spyglasses and round the ship distances to the nearest ten.

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

T			T												
430	130	290	430	130	70	290	7000	130	1700	2000	90	3000	1700	2900	3700

130	1700	70	4300

Round 434 to the nearest ten → **T**

Round 288 to the nearest ten → **E**

Round 1,734 to the nearest hundred → **A**

Round 2,901 to the nearest hundred → **C**

Round 6,881 to the nearest thousand → **F**

Round 71 to the nearest ten → **I**

Round 2,747 to the nearest thousand → **L**

Round 2,294 to the nearest thousand → **S**

Round 3,727 to the nearest hundred → **K**

Round 4,272 to the nearest hundred → **R**

Round 134 to the nearest ten → **H**

Round 88 to the nearest ten → **B**

Scratch space:

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

The quartermaster divides the captured pirate flags into shares to see who gets the most.

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:

$1/4 \text{ of } 36 = \boxed{}$

$4/8 \text{ of } 4 = \boxed{}$

$1/10 \text{ of } 40 = \boxed{}$

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

$2/6 \text{ of } 33 = \boxed{}$

$2/10 \text{ of } 35 = \boxed{}$

$3/6 \text{ of } 12 = \boxed{}$

$3/6 \text{ of } 16 = \boxed{}$

$1/4 \text{ of } 12 = \boxed{}$

$1/2 \text{ of } 2 = \boxed{}$

$6/10 \text{ of } 20 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain swings from the main mast rope, then ties a double sailor knot.
2. The villain swings from the main mast rope, then sings a loud sea shanty.
3. The villain studies the secret island map, then sings a loud sea shanty.
4. The villain studies the secret island map, then whispers to a green parrot.
5. The villain challenges the crew to a duel, then whispers to a green parrot.
6. The villain fires a warning cannon shot, then digs up a heavy iron chest.
7. The villain studies the secret island map, then ties a double sailor knot.
8. The villain steers the ship through a storm, then sings a loud sea shanty.
9. The villain challenges the crew to a duel, then digs up a heavy iron chest.
10. The villain fires a warning cannon shot, then whispers to a green parrot.
11. The villain steers the ship through a storm, then digs up a heavy iron chest.
12. The villain fires a warning cannon shot, then ties a double sailor knot.

Answer Key

The Mystery of the Golden Anchor

Culprit: Grace OMalley

Cannon Blasting · Parrot Training · Left Handed · Black Hair · Easily Distracted

Trail: Start 21 → Clue 1 18 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE PIRATE DOES NOT HAVE PLANK WALKING"

$\frac{4}{6}$ of 63 = 42 (T) · $\frac{2}{8}$ of 56 = 14 (A) · $\frac{2}{3}$ of 51 = 34 (P) · $\frac{3}{6}$ of 104 = 52 (R) · $\frac{5}{10}$ of 52 = 26 (O) · $\frac{2}{8}$ of 60 = 15 (L) · $\frac{1}{3}$ of 177 = 59 (H) · $\frac{5}{8}$ of 8 = 5 (K) · $\frac{1}{4}$ of 24 = 6 (E) · $\frac{1}{6}$ of 192 = 32 (W) · $\frac{3}{10}$ of 90 = 27 (V) · $\frac{5}{10}$ of 86 = 43 (G) · $\frac{6}{8}$ of 32 = 24 (D) · $\frac{8}{10}$ of 55 = 44 (S) · $\frac{4}{5}$ of 35 = 28 (N) · $\frac{2}{8}$ of 124 = 31 (I)

Clue 2 (Word problems): "LEFT HANDED"

Quartermaster Higgins lined up 4 rows of 10 hardtack biscuits. How many hardtack biscuits in all? = 40 (L) · Quartermaster Higgins found 19 coconuts yesterday and 7 more today. How many coconuts in all? = 26 (H) · Quartermaster Higgins lined up 11 rows of 10 spyglasses. How many spyglasses in all? = 110 (T) · Quartermaster Higgins lined up 2 rows of 7 hardtack biscuits. How many hardtack biscuits in all? = 14 (A) · There were 83 doubloons. 10 were used up. How many doubloons are left? = 73 (F) · Quartermaster Higgins lined up 9 rows of 7 spyglasses. How many spyglasses in all? = 63 (N) · There were 77 cannonballs. 34 were used up. How many cannonballs are left? = 43 (E)

Clue 3 (Bar model word problems): "EASILY DISTRACTED"

Quartermaster Higgins shares 188 hardtack biscuits equally among 2 teams. How many hardtack biscuits does each team get? = 94 (E) · One group collected 81 hardtack biscuits and another group collected 33 hardtack biscuits. How many hardtack biscuits in all? = 114 (Y) · Quartermaster Higgins has 145 doubloons, packed 5 to a bag. How many bags can be filled? = 29 (L) · There were 107 coconuts in all. 9 coconuts were used. How many coconuts are left? = 98 (A) · One group collected 41 doubloons and another group collected 69 doubloons. How many doubloons in all? = 110 (I) · Quartermaster Higgins has 216 hardtack biscuits, packed 3 to a bag. How many bags can be filled? = 72 (D) · The red team has 70 doubloons and the blue team has 8 doubloons. How many more doubloons does the red team have? = 62 (S)

Clue 4 (Rounding): "THE THIEF HAS BLACK HAIR"

Round 434 to the nearest ten = 430 (T) · Round 288 to the nearest ten = 290 (E) · Round 1,734 to the nearest hundred = 1700 (A) · Round 2,901 to the nearest hundred = 2900 (C) · Round 6,881 to the nearest thousand = 7000 (F) · Round 71 to the nearest ten = 70 (I) · Round 2,747 to the nearest thousand = 3000 (L) · Round 2,294 to the nearest thousand = 2000 (S) · Round 3,727 to the nearest hundred = 3700 (K) · Round 4,272 to the nearest hundred = 4300 (R) · Round 134 to the nearest ten = 130 (H) · Round 88 to the nearest ten = 90 (B)

Clue 5 (Fractions of a number): surviving statement is box 10 → Grace OMalley

$\frac{1}{4}$ of 36 = 9 · $\frac{4}{8}$ of 4 = 2 · $\frac{1}{10}$ of 40 = 4 · $\frac{1}{4}$ of 20 = 5 · $\frac{2}{6}$ of 33 = 11 · $\frac{2}{10}$ of 35 = 7 · $\frac{3}{6}$ of 12 = 6 · $\frac{3}{6}$ of 16 = 8 · $\frac{1}{4}$ of 12 = 3 · $\frac{1}{2}$ of 2 = 1 · $\frac{6}{10}$ of 20 = 12