The Case of the Missing Royal Pearl

Grade 5 math · Fractions of a number, Order of operations, Multiplication, Rounding, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

When the Great Glowing Pearl vanishes from the Sunken Vault, the Coral Reef Guard calls upon you to track down the thief using ocean clues and math evidence.

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 Pearl Thief is _____

Possible suspects

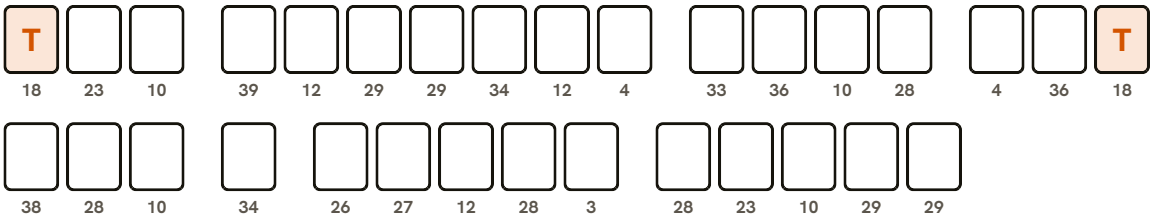
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	TRIDENT MAGIC	OCEAN ARTIFACT	SWIMMING HABIT	FIN COLOR	DISLIKED SOUND
Tidus	Wave Whisper	Prism Shell	Right Fin Striker	Deep Sapphire	Dolphin Whistle
Thallas	Bubble Blast	Starfish Compass	Left Fin Striker	Coral Crimson	Ship Bell Ring
Nixie	Current Charm	Glowing Conch	Left Fin Striker	Coral Crimson	Dolphin Whistle
Kelpie	Bubble Blast	Seaweed Lasso	Left Fin Striker	Coral Crimson	Ship Bell Ring
Coralia	Bubble Blast	Seaweed Lasso	Left Fin Striker	Deep Sapphire	Ship Bell Ring
Muriel	Wave Whisper	Glowing Conch	Left Fin Striker	Deep Sapphire	Dolphin Whistle
Maren	Tidal Surge	Coral Mirror	Left Fin Striker	Deep Sapphire	Ship Bell Ring
Sirena	Current Charm	Glowing Conch	Left Fin Striker	Deep Sapphire	Foghorn Blast
Ariel	Hydro Shield	Glowing Conch	Right Fin Striker	Deep Sapphire	Dolphin Whistle
Delphine	Tidal Surge	Starfish Compass	Right Fin Striker	Emerald Green	Ship Bell Ring
Coral	Current Charm	Starfish Compass	Left Fin Striker	Emerald Green	Dolphin Whistle
Triton	Current Charm	Glowing Conch	Right Fin Striker	Deep Sapphire	Ship Bell Ring
Kai	Wave Whisper	Prism Shell	Left Fin Striker	Deep Sapphire	Dolphin Whistle
Naida	Bubble Blast	Prism Shell	Left Fin Striker	Coral Crimson	Dolphin Whistle
Selkie	Tidal Surge	Starfish Compass	Left Fin Striker	Deep Sapphire	Dolphin Whistle
Marina	Current Charm	Prism Shell	Left Fin Striker	Coral Crimson	Ship Bell Ring
Nerida	Tidal Surge	Starfish Compass	Right Fin Striker	Coral Crimson	Dolphin Whistle
Oceanus	Wave Whisper	Seaweed Lasso	Left Fin Striker	Deep Sapphire	Dolphin Whistle
Pearl	Tidal Surge	Prism Shell	Left Fin Striker	Coral Crimson	Foghorn Blast
Caspian	Tidal Surge	Coral Mirror	Left Fin Striker	Deep Sapphire	Dolphin Whistle
Tritonus	Bubble Blast	Coral Mirror	Right Fin Striker	Deep Sapphire	Dolphin Whistle

CLUE 1 Fractions of a number

> The Vault Keeper examined the inventory ledger where only a fraction of the royal pearls remained unaccounted for.

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



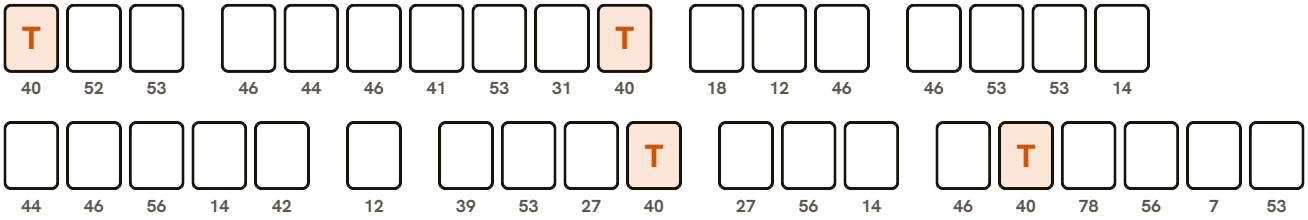
6/8 of 24 = ☐ → T	1/5 of 115 = ☐ → H	2/6 of 12 = ☐ → N
1/4 of 156 = ☐ → V	2/10 of 180 = ☐ → O	2/5 of 65 = ☐ → P
1/6 of 168 = ☐ → S	5/10 of 54 = ☐ → R	2/6 of 87 = ☐ → L
1/3 of 99 = ☐ → D	4/6 of 51 = ☐ → A	4/8 of 76 = ☐ → U
2/6 of 36 = ☐ → I	1/2 of 20 = ☐ → E	2/10 of 15 = ☐ → M

Scratch space:

CLUE 2 Order of operations

To decode the lock matrix on the ancient reef safe you must evaluate the multi step magic sequence in order.

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



12 × 4 - 8 = ☐ → T

46 + 4 × 8 = ☐ → R

9 × 6 - 8 = ☐ → S

1 + 2 × 3 = ☐ → K

2 + 5 × 2 = ☐ → A

6 × 9 - 12 = ☐ → G

2 + 6 × 2 = ☐ → N

9 × 6 - 2 = ☐ → H

10 × 5 - 19 = ☐ → C

5 × 9 - 27 = ☐ → W

37 + 2 × 2 = ☐ → P

11 × 7 - 21 = ☐ → I

4 + 8 × 5 = ☐ → U

11 × 4 - 17 = ☐ → F

10 × 5 - 11 = ☐ → L

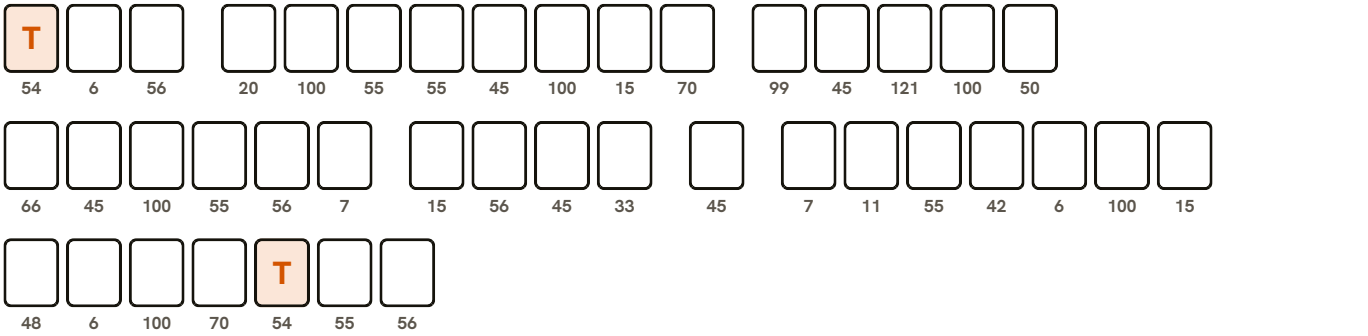
8 × 10 - 27 = ☐ → E

Scratch space:

CLUE 3 Multiplication facts (1-12)

> The guard counted rows of glowing sea crystals stacked along the cavern walls to estimate the thief path.

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



6 × 9 = ☐ → T	8 × 7 = ☐ → E	11 × 9 = ☐ → M
11 × 5 = ☐ → L	11 × 1 = ☐ → O	5 × 9 = ☐ → A
1 × 6 = ☐ → H	1 × 7 = ☐ → D	5 × 10 = ☐ → C
11 × 6 = ☐ → F	10 × 10 = ☐ → I	11 × 11 = ☐ → G
4 × 5 = ☐ → V	6 × 7 = ☐ → P	3 × 11 = ☐ → R
10 × 7 = ☐ → S	12 × 4 = ☐ → W	

5 × 3 = ☐ → N

Scratch space:

CLUE 4 Rounding

The sonar display at the guard station rounded the depth measurements to the nearest ten fathoms.

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

S					S										
1300	9000	2000	700	130	1300	700	130	5000	30	3000	130	170	70	1100	300

S												
1300	170	70	20	20	130	430	130	300	300	130	130	900

S							
1300	2000	900	900	170	70	430	130

Round 1,338 to the nearest hundred ☐ → S

Round 23 to the nearest ten ☐ → M

Round 134 to the nearest ten ☐ → E

Round 299 to the nearest hundred ☐ → D

Round 168 to the nearest ten ☐ → H

Round 2,039 to the nearest thousand ☐ → A

Round 68 to the nearest ten ☐ → I

Round 8,919 to the nearest thousand ☐ → C

Round 31 to the nearest ten ☐ → T

Round 433 to the nearest ten ☐ → R

Round 747 to the nearest hundred ☐ → L

Round 4,696 to the nearest thousand ☐ → F

Round 3,380 to the nearest thousand ☐ → B

Round 1,094 to the nearest hundred ☐ → N

Round 916 to the nearest hundred ☐ → P

Scratch space:

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

> The detective split the recovered shell tokens equally among the underwater search squads.

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:

60 ÷ 5 = ☐	36 ÷ 12 = ☐	8 ÷ 8 = ☐	48 ÷ 8 = ☐	8 ÷ 2 = ☐
20 ÷ 4 = ☐	45 ÷ 5 = ☐	49 ÷ 7 = ☐	24 ÷ 12 = ☐	40 ÷ 5 = ☐
80 ÷ 8 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain summoned a tidal surge, then lifted a coral mirror.
2. The villain launched a bubble blast, then swung a seaweed lasso.
3. The villain summoned a tidal surge, then consulted a starfish compass.
4. The villain cast a hydro shield, then consulted a starfish compass.
5. The villain summoned a tidal surge, then shined a prism shell.
6. The villain wove a current charm, then consulted a starfish compass.
7. The villain launched a bubble blast, then lifted a coral mirror.
8. The villain summoned a tidal surge, then swung a seaweed lasso.
9. The villain launched a bubble blast, then shined a prism shell.
10. The villain called a wave whisper, then shined a prism shell.
11. The villain called a wave whisper, then flashed a glowing conch.
12. The villain called a wave whisper, then swung a seaweed lasso.

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TEACHER / PARENT

Answer Key

The Case of the Missing Royal Pearl

Culprit: Muriel

Wave Whisper · Glowing Conch · Left Fin Striker · Deep Sapphire · Dolphin Whistle

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

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE A PRISM SHELL"

6/8 of 24 = 18 (T) · 1/5 of 115 = 23 (H) · 2/6 of 12 = 4 (N) · 1/4 of 156 = 39 (V) · 2/10 of 180 = 36 (O) · 2/5 of 65 = 26 (P) · 1/6 of 168 = 28 (S) · 5/10 of 54 = 27 (R) · 2/6 of 87 = 29 (L) · 1/3 of 99 = 33 (D) · 4/6 of 51 = 34 (A) · 4/8 of 76 = 38 (U) · 2/6 of 36 = 12 (I) · 1/2 of 20 = 10 (E) · 2/10 of 15 = 3 (M)

Clue 2 (Order of operations): "THE SUSPECT WAS SEEN USING A LEFT FIN STRIKE"

12 × 4 - 8 = 40 (T) · 46 + 4 × 8 = 78 (R) · 9 × 6 - 8 = 46 (S) · 1 + 2 × 3 = 7 (K) · 2 + 5 × 2 = 12 (A) · 6 × 9 - 12 = 42 (G) · 2 + 6 × 2 = 14 (N) · 9 × 6 - 2 = 52 (H) · 10 × 5 - 19 = 31 (C) · 5 × 9 - 27 = 18 (W) · 37 + 2 × 2 = 41 (P) · 11 × 7 - 21 = 56 (I) · 4 + 8 × 5 = 44 (U) · 11 × 4 - 17 = 27 (F) · 10 × 5 - 11 = 39 (L) · 8 × 10 - 27 = 53 (E)

Clue 3 (Multiplication facts (1-12)): "THE VILLAINS MAGIC FAILED NEAR A DOLPHIN WHISTLE"

6 × 9 = 54 (T) · 8 × 7 = 56 (E) · 11 × 9 = 99 (M) · 11 × 5 = 55 (L) · 11 × 1 = 11 (O) · 5 × 9 = 45 (A) · 1 × 6 = 6 (H) · 1 × 7 = 7 (D) · 5 × 10 = 50 (C) · 11 × 6 = 66 (F) · 10 × 10 = 100 (I) · 11 × 11 = 121 (G) · 4 × 5 = 20 (V) · 6 × 7 = 42 (P) · 3 × 11 = 33 (R) · 5 × 3 = 15 (N) · 10 × 7 = 70 (S) · 12 × 4 = 48 (W)

Clue 4 (Rounding): "SCALES LEFT BEHIND SHIMMERED DEEP SAPPHIRE"

Round 1,338 to the nearest hundred = 1300 (S) · Round 23 to the nearest ten = 20 (M) · Round 134 to the nearest ten = 130 (E) · Round 299 to the nearest hundred = 300 (D) · Round 168 to the nearest ten = 170 (H) · Round 2,039 to the nearest thousand = 2000 (A) · Round 68 to the nearest ten = 70 (I) · Round 8,919 to the nearest thousand = 9000 (C) · Round 31 to the nearest ten = 30 (T) · Round 433 to the nearest ten = 430 (R) · Round 747 to the nearest hundred = 700 (L) · Round 4,696 to the nearest thousand = 5000 (F) · Round 3,380 to the nearest thousand = 3000 (B) · Round 1,094 to the nearest hundred = 1100 (N) · Round 916 to the nearest hundred = 900 (P)

Clue 5 (Division facts (1-12)): surviving statement is box 11 → Muriel

60 ÷ 5 = 12 · 36 ÷ 12 = 3 · 8 ÷ 8 = 1 · 48 ÷ 8 = 6 · 8 ÷ 2 = 4 · 20 ÷ 4 = 5 · 45 ÷ 5 = 9 · 49 ÷ 7 = 7 · 24 ÷ 12 = 2 · 40 ÷ 5 = 8 · 80 ÷ 8 = 10