The Secret of Sunken Island

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

Captain Sandy reported that the golden lighthouse key was taken from the cove office. The detective team must crack the island clues to reveal the guilty Sea Rogue.

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 Sea Rogue is _____

Possible suspects

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

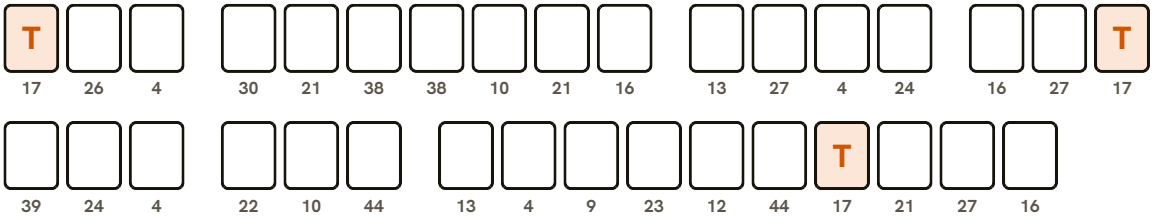
NAME	MAIN GADGET	EXTRA GEAR	DOMINANT HAND	HAIR STYLE	FOILED BY
Lookout Lou	Pocket Telescope	Brass Lantern	Left Handed	Braided Brown	Squeaky Boots
Officer Owen	Glider Wings	Brass Lantern	Left Handed	Braided Brown	Loud Bell
Pilot Penny	Glider Wings	Brass Lantern	Right Handed	Spiky Red	Bright Flashlight
Beacon Ben	Grappling Hook	Brass Lantern	Left Handed	Curly Black	Squeaky Boots
Navigator Pete	Glider Wings	Sonar Watch	Left Handed	Spiky Red	Bright Flashlight
Tide Toby	Grappling Hook	Map Decryption	Left Handed	Braided Brown	Squeaky Boots
Harbor Holly	Glider Wings	Brass Lantern	Left Handed	Spiky Red	Bright Flashlight
Deckhand Drew	Glider Wings	Map Decryption	Left Handed	Curly Black	Squeaky Boots
Diver Dan	Grappling Hook	Whistle Alarm	Left Handed	Spiky Red	Loud Bell
Ranger Ray	Grappling Hook	Whistle Alarm	Left Handed	Curly Black	Squeaky Boots
Guide Gail	Glider Wings	Whistle Alarm	Right Handed	Braided Brown	Squeaky Boots
Scout Sean	Grappling Hook	Brass Lantern	Left Handed	Braided Brown	Bright Flashlight
Fisher Finn	Compass Lock	Sonar Watch	Left Handed	Braided Brown	Squeaky Boots
Ranger Rick	Pocket Telescope	Brass Lantern	Right Handed	Braided Brown	Squeaky Boots
Marina Mia	Glider Wings	Whistle Alarm	Left Handed	Spiky Red	Loud Bell
Marina Maya	Glider Wings	Signal Flares	Left Handed	Braided Brown	Squeaky Boots
Officer Clara	Pocket Telescope	Map Decryption	Left Handed	Spiky Red	Squeaky Boots
Captain Sandy	Glider Wings	Sonar Watch	Left Handed	Braided Brown	Squeaky Boots
Diver Daisy	Glider Wings	Signal Flares	Right Handed	Braided Brown	Loud Bell
Beacon Bella	Compass Lock	Sonar Watch	Right Handed	Curly Black	Squeaky Boots
Sailor Sara	Compass Lock	Signal Flares	Right Handed	Spiky Red	Bright Flashlight

make your own at mathcrackers.com

CLUE 1 Percentages

The harbor battery panel shows energy percentages needed to open the lock box.

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



50% of 34 = ☐ → T

40% of 30 = ☐ → Y

40% of 110 = ☐ → P

10% of 240 = ☐ → S

50% of 8 = ☐ → E

25% of 92 = ☐ → R

5% of 200 = ☐ → A

75% of 36 = ☐ → O

10% of 160 = ☐ → N

60% of 15 = ☐ → C

75% of 40 = ☐ → V

25% of 156 = ☐ → U

25% of 152 = ☐ → L

50% of 26 = ☐ → D

5% of 440 = ☐ → M

25% of 84 = ☐ → I

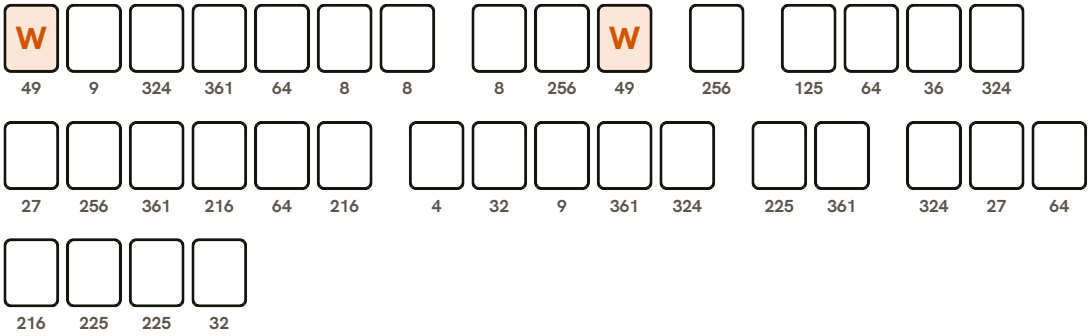
50% of 52 = ☐ → H

Scratch space:

CLUE 2 Exponents

A mystery chest features a keypad powered by repeated multiplying powers.

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



7^2 = ☐ → W

2^5 = ☐ → R

2^2 = ☐ → P

6^3 = ☐ → D

19^2 = ☐ → N

6^2 = ☐ → F

15^2 = ☐ → O

18^2 = ☐ → T

4^3 = ☐ → E

2^3 = ☐ → S

4^4 = ☐ → A

5^3 = ☐ → L

3^2 = ☐ → I

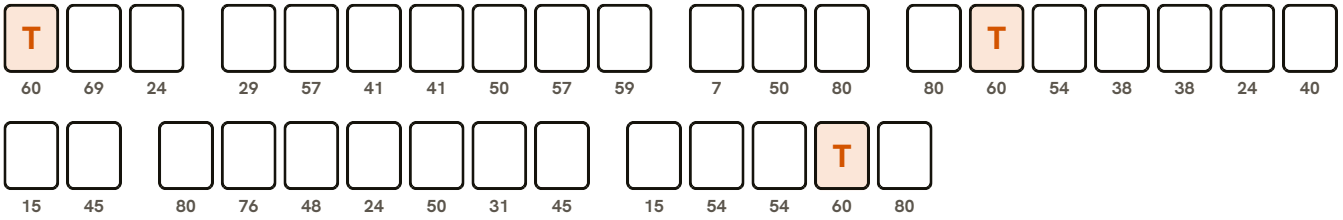
3^3 = ☐ → H

Scratch space:

CLUE 3 Order of operations

> Captain Sandy found a chart where operations must be solved in exact step order.

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



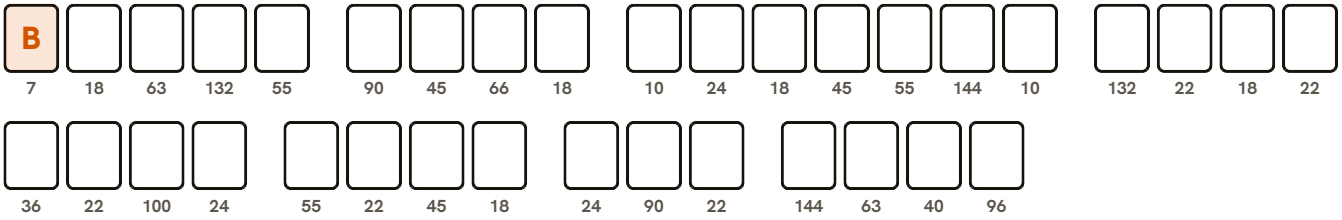
7 × 9 - 3 = ☐ → T	4 × 11 - 29 = ☐ → B	11 + 6 × 3 = ☐ → V
41 + 2 × 2 = ☐ → Y	10 × 6 - 12 = ☐ → U	12 × 5 - 3 = ☐ → I
7 × 10 - 1 = ☐ → H	6 × 8 - 7 = ☐ → L	51 + 4 × 2 = ☐ → N
20 + 8 × 7 = ☐ → Q	6 × 11 - 26 = ☐ → D	2 × 11 - 15 = ☐ → W
64 + 2 × 8 = ☐ → S	26 + 3 × 8 = ☐ → A	42 + 2 × 6 = ☐ → O
3 × 11 - 2 = ☐ → K	5 × 8 - 16 = ☐ → E	4 × 10 - 2 = ☐ → P

Scratch space:

CLUE 4 Multiplication facts (1-12)

The dock master stacked supply crates in equal groups across the wooden pier.

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



7 × 1 = ☐ → B

11 × 6 = ☐ → I

2 × 11 = ☐ → E

11 × 5 = ☐ → N

9 × 7 = ☐ → O

9 × 5 = ☐ → A

10 × 10 = ☐ → F

8 × 5 = ☐ → C

3 × 6 = ☐ → R

12 × 2 = ☐ → T

1 × 10 = ☐ → S

8 × 12 = ☐ → K

11 × 12 = ☐ → W

9 × 4 = ☐ → L

10 × 9 = ☐ → H

12 × 12 = ☐ → D

Scratch space:

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

> The search crew divided found brass coins equally among all patrol boats.

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:

84 ÷ 12 = ☐ | 132 ÷ 11 = ☐ | 60 ÷ 12 = ☐ | 64 ÷ 8 = ☐ | 42 ÷ 7 = ☐

4 ÷ 1 = ☐ | 99 ÷ 11 = ☐ | 90 ÷ 9 = ☐ | 8 ÷ 4 = ☐ | 18 ÷ 6 = ☐

55 ÷ 5 = ☐

Step 2 - cross out the sentence with each answer:

1. The villain scouted the harbor using a pocket telescope, then lit the path with a brass lantern.
2. The villain scouted the harbor using a pocket telescope, then tracked the route with a sonar watch.
3. The villain swung across the dock using a grappling hook, then lit the path with a brass lantern.
4. The villain swung across the dock using a grappling hook, then decoded the symbols with map decryption.
5. The villain zipped over the water using glider wings, then tracked the route with a sonar watch.
6. The villain bypassed the gate using a compass lock, then decoded the symbols with map decryption.
7. The villain zipped over the water using glider wings, then signaled allies with signal flares.
8. The villain zipped over the water using glider wings, then decoded the symbols with map decryption.
9. The villain scouted the harbor using a pocket telescope, then alerted guards with a whistle alarm.
10. The villain scouted the harbor using a pocket telescope, then signaled allies with signal flares.
11. The villain swung across the dock using a grappling hook, then alerted guards with a whistle alarm.
12. The villain bypassed the gate using a compass lock, then tracked the route with a sonar watch.

TEACHER / PARENT

Answer Key

The Secret of Sunken Island

Culprit: Lookout Lou

Pocket Telescope · Brass Lantern · Left Handed · Braided Brown · Squeaky Boots

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE VILLAIN DOES NOT USE MAP DECRYPTION"

50% of 34 = 17 (T) · 40% of 30 = 12 (Y) · 40% of 110 = 44 (P) · 10% of 240 = 24 (S) · 50% of 8 = 4 (E) · 25% of 92 = 23 (R) · 5% of 200 = 10 (A) · 75% of 36 = 27 (O) · 10% of 160 = 16 (N) · 60% of 15 = 9 (C) · 75% of 40 = 30 (V) · 25% of 156 = 39 (U) · 25% of 152 = 38 (L) · 50% of 26 = 13 (D) · 5% of 440 = 22 (M) · 25% of 84 = 21 (I) · 50% of 52 = 26 (H)

Clue 2 (Exponents): "WITNESS SAW A LEFT HANDED PRINT ON THE DOOR"

7^2 = 49 (W) · 2^5 = 32 (R) · 2^2 = 4 (P) · 6^3 = 216 (D) · 19^2 = 361 (N) · 6^2 = 36 (F) · 15^2 = 225 (O) · 18^2 = 324 (T) · 4^3 = 64 (E) · 2^3 = 8 (S) · 4^4 = 256 (A) · 5^3 = 125 (L) · 3^2 = 9 (I) · 3^3 = 27 (H)

Clue 3 (Order of operations): "THE VILLAIN WAS STOPPED BY SQUEAKY BOOTS"

7 × 9 - 3 = 60 (T) · 4 × 11 - 29 = 15 (B) · 11 + 6 × 3 = 29 (V) · 41 + 2 × 2 = 45 (Y) · 10 × 6 - 12 = 48 (U) · 12 × 5 - 3 = 57 (I) · 7 × 10 - 1 = 69 (H) · 6 × 8 - 7 = 41 (L) · 51 + 4 × 2 = 59 (N) · 20 + 8 × 7 = 76 (Q) · 6 × 11 - 26 = 40 (D) · 2 × 11 - 15 = 7 (W) · 64 + 2 × 8 = 80 (S) · 26 + 3 × 8 = 50 (A) · 42 + 2 × 6 = 54 (O) · 3 × 11 - 2 = 31 (K) · 5 × 8 - 16 = 24 (E) · 4 × 10 - 2 = 38 (P)

Clue 4 (Multiplication facts (1-12)): "BROWN HAIR STRANDS WERE LEFT NEAR THE DOCK"

7 × 1 = 7 (B) · 11 × 6 = 66 (I) · 2 × 11 = 22 (E) · 11 × 5 = 55 (N) · 9 × 7 = 63 (O) · 9 × 5 = 45 (A) · 10 × 10 = 100 (F) · 8 × 5 = 40 (C) · 3 × 6 = 18 (R) · 12 × 2 = 24 (T) · 1 × 10 = 10 (S) · 8 × 12 = 96 (K) · 11 × 12 = 132 (W) · 9 × 4 = 36 (L) · 10 × 9 = 90 (H) · 12 × 12 = 144 (D)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Lookout Lou

84 ÷ 12 = 7 · 132 ÷ 11 = 12 · 60 ÷ 12 = 5 · 64 ÷ 8 = 8 · 42 ÷ 7 = 6 · 4 ÷ 1 = 4 · 99 ÷ 11 = 9 · 90 ÷ 9 = 10 · 8 ÷ 4 = 2 · 18 ÷ 6 = 3 · 55 ÷ 5 = 11