The Cloud Citadel Heist

Grade 6 math · Multiplication, Word problems, Percentages, Exponents, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

During the annual Sky Festival, someone snuck into the high observatory and stole the Golden Compass! The High Navigator needs your help to examine the evidence and catch the culprit.

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 Cloud Thief is _____

Possible suspects

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

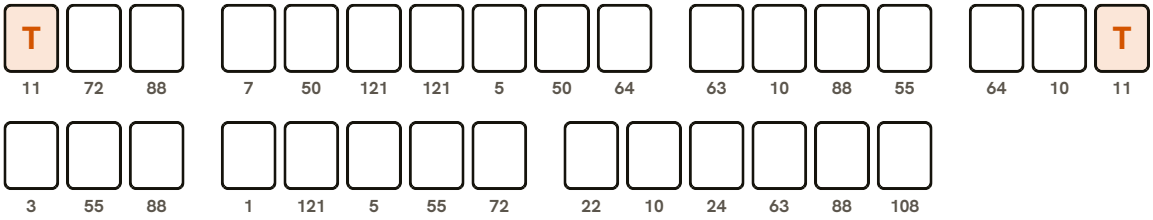
NAME	PRIMARY GEAR	SECONDARY GEAR	DOMINANT HAND	HEADGEAR	VULNERABILITY
Ranger Ivy	Wind Glider	Flash Powder	Left Handed	Neon Blue Wig	Loud Noise
Captain Vance	Force Shield	Grapple Hook	Left Handed	Crimson Helmet	Loud Noise
Navigator Zoe	Pulse Cannon	Smoke Bomb	Right Handed	Crimson Helmet	Bright Light
Captain Nina	Pulse Cannon	Grapple Hook	Left Handed	Neon Blue Wig	Loud Noise
Tracker Chloe	Gravity Boots	Smoke Bomb	Left Handed	Silver Goggles	Cold Air
Scout Finn	Pulse Cannon	Flash Powder	Right Handed	Neon Blue Wig	Bright Light
Scout Maya	Gravity Boots	Smoke Bomb	Left Handed	Neon Blue Wig	Loud Noise
Pilot Ruby	Wind Glider	Smoke Bomb	Right Handed	Neon Blue Wig	Loud Noise
Commander Cole	Force Shield	Decoy Drone	Left Handed	Neon Blue Wig	Loud Noise
Specialist Nora	Force Shield	Grapple Hook	Right Handed	Silver Goggles	Bright Light
Commander Kai	Pulse Cannon	Grapple Hook	Right Handed	Crimson Helmet	Bright Light
Operator Dan	Gravity Boots	Grapple Hook	Right Handed	Neon Blue Wig	Loud Noise
Engineer Eli	Gravity Boots	EMP Grenade	Left Handed	Neon Blue Wig	Bright Light
Engineer Ella	Gravity Boots	Decoy Drone	Left Handed	Silver Goggles	Loud Noise
Agent Tess	Force Shield	Flash Powder	Left Handed	Neon Blue Wig	Cold Air
Officer Ava	Gravity Boots	Decoy Drone	Left Handed	Neon Blue Wig	Bright Light
Officer Sam	Force Shield	Flash Powder	Left Handed	Crimson Helmet	Cold Air
Mechanic Ben	Sonic Whistle	Grapple Hook	Left Handed	Crimson Helmet	Bright Light
Explorer Rex	Force Shield	Decoy Drone	Left Handed	Neon Blue Wig	Bright Light
Ranger Owen	Pulse Cannon	Smoke Bomb	Left Handed	Neon Blue Wig	Loud Noise
Agent Jax	Sonic Whistle	EMP Grenade	Left Handed	Silver Goggles	Cold Air

make your own at mathcrackers.com

CLUE 1 Multiplication facts (1-12)

> You search the dock manager's ledger, where airship cargo supplies are tracked in equal rows and stacks.

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



1 × 11 = ☐ → T	11 × 11 = ☐ → L	11 × 2 = ☐ → P
1 × 3 = ☐ → U	1 × 5 = ☐ → A	9 × 12 = ☐ → R	7 × 9 = ☐ → D
11 × 8 = ☐ → E	1 × 1 = ☐ → F	10 × 5 = ☐ → I
5 × 11 = ☐ → S	2 × 5 = ☐ → O	8 × 8 = ☐ → N	7 × 1 = ☐ → V
12 × 2 = ☐ → W	6 × 12 = ☐ → H

Scratch space:

CLUE 2 Word problems

A sky scout shares a tricky word problem based on their observations near the observatory.

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
100	96	70	45	9	27	17		96	

.

There were 103 rope coil. 3 were used up. How many rope coil are left?

Answer: ☐ → L

Scout Maya found 11 rope coil yesterday and 6 more today. How many rope coil in all?

Answer: ☐ → N

Scout Maya lined up 8 rows of 12 crystal lantern. How many crystal lantern in all?

Answer: ☐ → E

Scout Maya found 59 sky compass yesterday and 11 more today. How many sky compass in all?

Answer: ☐ → F

There were 41 airship gear. 14 were used up. How many airship gear are left?

Answer: ☐ → A

There were 22 airship gear. 13 were used up. How many airship gear are left?

Answer: ☐ → H

Scout Maya lined up 5 rows of 9 signal flare. How many signal flare in all?

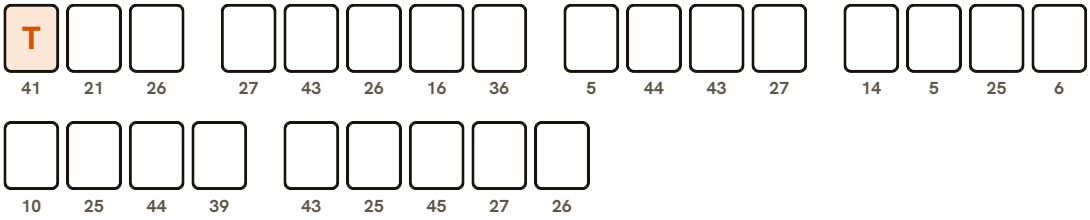
Answer: ☐ → T

Scratch space:

CLUE 3 Percentages

The bridge computer displays partial energy readings in percentages to reveal a hidden security code.

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



10% of 410 = ☐ → T

50% of 12 = ☐ → M

25% of 104 = ☐ → E

50% of 50 = ☐ → O

10% of 100 = ☐ → L

50% of 28 = ☐ → F

75% of 28 = ☐ → H

75% of 52 = ☐ → D

20% of 25 = ☐ → R

5% of 880 = ☐ → U

5% of 900 = ☐ → I

50% of 54 = ☐ → S

40% of 90 = ☐ → K

10% of 160 = ☐ → A

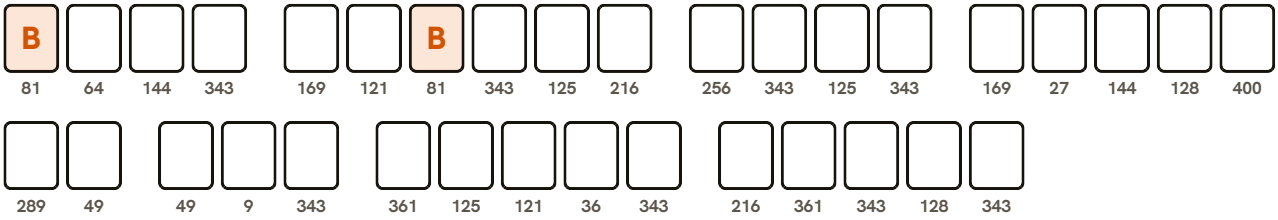
25% of 172 = ☐ → N

Scratch space:

CLUE 4 Exponents

An encrypted logbook uses exponential growth patterns to lock the vault files.

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



9^2 = ☐ → B

13^2 = ☐ → F

2^7 = ☐ → N

2^6 = ☐ → L

7^3 = ☐ → E

19^2 = ☐ → C

6^3 = ☐ → S

17^2 = ☐ → A

2^8 = ☐ → W

11^2 = ☐ → I

7^2 = ☐ → T

3^3 = ☐ → O

12^2 = ☐ → U

5^3 = ☐ → R

20^2 = ☐ → D

3^2 = ☐ → H

6^2 = ☐ → M

Scratch space:

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

> The quartermaster divides remaining signal flares equally among search teams to reveal 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:

12 ÷ 12 = ☐	120 ÷ 10 = ☐	60 ÷ 12 = ☐	33 ÷ 11 = ☐	110 ÷ 10 = ☐
70 ÷ 10 = ☐	100 ÷ 10 = ☐	40 ÷ 10 = ☐	80 ÷ 10 = ☐	24 ÷ 12 = ☐
36 ÷ 4 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain leaped with gravity boots, then threw a smoke bomb.
2. The villain soared on a wind glider, then threw a smoke bomb.
3. The villain blew a sonic whistle, then threw a smoke bomb.
4. The villain leaped with gravity boots, then deployed a decoy drone.
5. The villain blocked the guards, then deployed a decoy drone.
6. The villain blasted open the gate, then threw a smoke bomb.
7. The villain leaped with gravity boots, then blinded the sentries with flash powder.
8. The villain blew a sonic whistle, then snagged the latch with a grapple hook.
9. The villain blew a sonic whistle, then deployed a decoy drone.
10. The villain blew a sonic whistle, then blinded the sentries with flash powder.
11. The villain blew a sonic whistle, then disarmed the alarms with an emp grenade.
12. The villain blasted open the gate, then snagged the latch with a grapple hook.

TEACHER / PARENT

Answer Key

The Cloud Citadel Heist

Culprit: Ranger Owen

Pulse Cannon · Smoke Bomb · Left Handed · Neon Blue Wig · Loud Noise

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE FLASH POWDER"

1 × 11 = 11 (T) · 11 × 11 = 121 (L) · 11 × 2 = 22 (P) · 1 × 3 = 3 (U) · 1 × 5 = 5 (A) · 9 × 12 = 108 (R) · 7 × 9 = 63 (D) · 11 × 8 = 88 (E) · 1 × 1 = 1 (F) · 10 × 5 = 50 (I) · 5 × 11 = 55 (S) · 2 × 5 = 10 (O) · 8 × 8 = 64 (N) · 7 × 1 = 7 (V) · 12 × 2 = 24 (W) · 6 × 12 = 72 (H)

Clue 2 (Word problems): "LEFT HANDED"

There were 103 rope coil. 3 were used up. How many rope coil are left? = 100 (L) · Scout Maya found 11 rope coil yesterday and 6 more today. How many rope coil in all? = 17 (N) · Scout Maya lined up 8 rows of 12 crystal lantern. How many crystal lantern in all? = 96 (E) · Scout Maya found 59 sky compass yesterday and 11 more today. How many sky compass in all? = 70 (F) · There were 41 airship gear. 14 were used up. How many airship gear are left? = 27 (A) · There were 22 airship gear. 13 were used up. How many airship gear are left? = 9 (H) · Scout Maya lined up 5 rows of 9 signal flare. How many signal flare in all? = 45 (T)

Clue 3 (Percentages): "THE SNEAK RUNS FROM LOUD NOISE"

10% of 410 = 41 (T) · 50% of 12 = 6 (M) · 25% of 104 = 26 (E) · 50% of 50 = 25 (O) · 10% of 100 = 10 (L) · 50% of 28 = 14 (F) · 75% of 28 = 21 (H) · 75% of 52 = 39 (D) · 20% of 25 = 5 (R) · 5% of 880 = 44 (U) · 5% of 900 = 45 (I) · 50% of 54 = 27 (S) · 40% of 90 = 36 (K) · 10% of 160 = 16 (A) · 25% of 172 = 43 (N)

Clue 4 (Exponents): "BLUE FIBERS WERE FOUND AT THE CRIME SCENE"

9^2 = 81 (B) · 13^2 = 169 (F) · 2^7 = 128 (N) · 2^6 = 64 (L) · 7^3 = 343 (E) · 19^2 = 361 (C) · 6^3 = 216 (S) · 17^2 = 289 (A) · 2^8 = 256 (W) · 11^2 = 121 (I) · 7^2 = 49 (T) · 3^3 = 27 (O) · 12^2 = 144 (U) · 5^3 = 125 (R) · 20^2 = 400 (D) · 3^2 = 9 (H) · 6^2 = 36 (M)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Ranger Owen

12 ÷ 12 = 1 · 120 ÷ 10 = 12 · 60 ÷ 12 = 5 · 33 ÷ 11 = 3 · 110 ÷ 10 = 11 · 70 ÷ 10 = 7 · 100 ÷ 10 = 10 · 40 ÷ 10 = 4 · 80 ÷ 10 = 8 · 24 ÷ 12 = 2 · 36 ÷ 4 = 9