



The Shadow Realm Mystery

Grade 6 math · Multiplication, Word problems, Multi-step word problems, Percentages, Missing addends · Reading level grades 3-4

Detective: _____ Date: _____

A strange creature from a parallel dimension has breached the town lab! Solve the math clues to identify the suspect.

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 Shadow Creature is _____

Possible suspects

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

NAME	SHADOW POWER	GADGET	DOMINANT HAND	HAIRSTYLE	WEAKNESS
Max M	Mind Whisper	Ham Radio	Left Handed	Shaggy Mullet	Heat Lamp
Erica S	Portal Warp	Ham Radio	Right Handed	Curly Top	Salt Bath
Bob N	Portal Warp	Slingshot Shot	Left Handed	Shaggy Mullet	Loud Music
Nancy W	Mind Whisper	Slingshot Shot	Right Handed	Shaggy Mullet	Loud Music
Billy H	Telekinesis	Walkie Jammer	Left Handed	Buzz Cut	Loud Music
Robin B	Portal Warp	Ham Radio	Left Handed	Curly Top	Heat Lamp
Argyle K	Mind Whisper	Ham Radio	Left Handed	Shaggy Mullet	Loud Music
Joyce B	Vine Trap	Flashlight Array	Left Handed	Shaggy Mullet	Loud Music
Holly W	Electric Surge	Slingshot Shot	Left Handed	Buzz Cut	Salt Bath
Jonathan B	Electric Surge	Ham Radio	Left Handed	Curly Top	Heat Lamp
Lucas M	Electric Surge	Walkie Jammer	Right Handed	Curly Top	Salt Bath
Dustin B	Vine Trap	Flashlight Array	Left Handed	Buzz Cut	Heat Lamp
Barb H	Electric Surge	Flashlight Array	Left Handed	Shaggy Mullet	Salt Bath
Eleven Z	Electric Surge	Slingshot Shot	Right Handed	Curly Top	Loud Music
Murray B	Vine Trap	Ham Radio	Right Handed	Shaggy Mullet	Heat Lamp
Vickie T	Vine Trap	Walkie Jammer	Left Handed	Buzz Cut	Heat Lamp
Will B	Vine Trap	Walkie Jammer	Left Handed	Shaggy Mullet	Loud Music
Karen W	Telekinesis	Walkie Jammer	Left Handed	Shaggy Mullet	Loud Music
Carol P	Vine Trap	Compass Spin	Left Handed	Shaggy Mullet	Salt Bath
Tommy H	Electric Surge	Ham Radio	Left Handed	Buzz Cut	Loud Music
Steve H	Electric Surge	Ham Radio	Right Handed	Shaggy Mullet	Loud Music

CLUE 1

Multiplication facts (1-12)

We tallied rows of strange shadow portals blooming across the lab map.

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

T																T
7	2	35	30	33	121	121	14	33	96	81	24	35	22	96	24	7
54	22	35	14	21	121	14	22	2	121	33	10	2	7	14	1	1

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

$5 \times 7 = \square \rightarrow \text{E}$

$2 \times 11 = \square \rightarrow \text{S}$

$12 \times 8 = \square \rightarrow \text{N}$

$3 \times 10 = \square \rightarrow \text{V}$

$9 \times 6 = \square \rightarrow \text{U}$

$2 \times 7 = \square \rightarrow \text{A}$

$6 \times 4 = \square \rightarrow \text{O}$

$3 \times 7 = \square \rightarrow \text{F}$

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

$1 \times 2 = \square \rightarrow \text{H}$

$3 \times 11 = \square \rightarrow \text{I}$

$1 \times 1 = \square \rightarrow \text{R}$

$11 \times 11 = \square \rightarrow \text{L}$

$12 \times 5 = \square \rightarrow \text{Y}$

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

Scratch space:

CLUE 2

Word problems

The kids analyzed radio frequencies coming from the mysterious dark dimension.

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

103

115

69

102

38

101

23

115

There were 108 walkie talkies. 5 were used up. How many walkie talkies are left?

Answer: → L

There were 79 waffles. 10 were used up. How many waffles are left?

Answer: → F

Sheriff found 22 compasses yesterday and 16 more today. How many compasses in all?

Answer: → H

There were 28 walkie talkies. 5 were used up. How many walkie talkies are left?

Answer: → N

There were 106 cassette tapes. 5 were used up. How many cassette tapes are left?

Answer: → A

Sheriff found 65 cassette tapes yesterday and 37 more today. How many cassette tapes in all?

Answer: → T

Sheriff found 93 waffles yesterday and 22 more today. How many waffles in all?

Answer: → E

Scratch space:

CLUE 3

Multi-step word problems

The sheriff calculated supply crates and battery packs needed for the expedition.

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

Someone scared the villain off with L C .

80 31 86 14 84 86 78 23

Sheriff collected 10 compasses in the morning and 310 compasses in the afternoon, then split them equally among 4 AV Club. How many compasses did each get?

Answer: → L

There were 124 cassette tapes in all. 1 AV Club used 9 cassette tapes each. The other 5 AV Club shared the rest equally. How many cassette tapes did each of the other AV Club get?

Answer: → I

Sheriff earned 5 compasses in each of 2 rounds, plus 32 bonus compasses. Then 11 compasses were lost. How many compasses are left?

Answer: → O

Sheriff collected 86 waffles in the morning and 86 waffles in the afternoon, then split them equally among 2 AV Club. How many waffles did each get?

Answer: → U

Sheriff collected 8 compasses in the morning and 62 compasses in the afternoon, then split them equally among 5 AV Club. How many compasses did each get?

Answer: → D

Sheriff collected 35 cassette tapes in the morning and 199 cassette tapes in the afternoon, then split them equally among 3 AV Club. How many cassette tapes did each get?

Answer: → S

Sheriff filled 5 boxes with 2 cassette tapes each, then found 74 more cassette tapes. How many cassette tapes are there in all?

Answer: → M

Scratch space:

CLUE 4 Percentages

The radar screen showed the exact percentage of power remaining in the town grid.

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

S																		S
6	16	44	14	14	17	25	20	41	41	8	34	16	44	21	12	28	44	6
37	29	20	5	36	29	5	34	16	8	23	21	5	8					

$25\% \text{ of } 24 = \boxed{} \rightarrow \boxed{\text{S}}$

$5\% \text{ of } 420 = \boxed{} \rightarrow \boxed{\text{I}}$

$25\% \text{ of } 20 = \boxed{} \rightarrow \boxed{\text{N}}$

$5\% \text{ of } 320 = \boxed{} \rightarrow \boxed{\text{H}}$

$5\% \text{ of } 880 = \boxed{} \rightarrow \boxed{\text{A}}$

$10\% \text{ of } 290 = \boxed{} \rightarrow \boxed{\text{O}}$

$40\% \text{ of } 20 = \boxed{} \rightarrow \boxed{\text{E}}$

$50\% \text{ of } 40 = \boxed{} \rightarrow \boxed{\text{U}}$

$10\% \text{ of } 370 = \boxed{} \rightarrow \boxed{\text{F}}$

$10\% \text{ of } 230 = \boxed{} \rightarrow \boxed{\text{V}}$

$20\% \text{ of } 205 = \boxed{} \rightarrow \boxed{\text{L}}$

$25\% \text{ of } 112 = \boxed{} \rightarrow \boxed{\text{W}}$

$10\% \text{ of } 340 = \boxed{} \rightarrow \boxed{\text{T}}$

$10\% \text{ of } 120 = \boxed{} \rightarrow \boxed{\text{R}}$

$20\% \text{ of } 70 = \boxed{} \rightarrow \boxed{\text{G}}$

$25\% \text{ of } 144 = \boxed{} \rightarrow \boxed{\text{D}}$

$25\% \text{ of } 68 = \boxed{} \rightarrow \boxed{\text{Y}}$

$20\% \text{ of } 125 = \boxed{} \rightarrow \boxed{\text{M}}$

Scratch space:

CLUE 5**Missing addends - the last clue**

We counted flashlights in the stash box to find how many went missing.

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:

$15 + \underline{\quad} = 20$

$18 + \underline{\quad} = 29$

$33 + \underline{\quad} = 39$

$38 + \underline{\quad} = 40$

$33 + \underline{\quad} = 45$

$22 + \underline{\quad} = 29$

$28 + \underline{\quad} = 29$

$13 + \underline{\quad} = 17$

$18 + \underline{\quad} = 28$

$17 + \underline{\quad} = 20$

$40 + \underline{\quad} = 49$

Step 2 - cross out the sentence with each answer:

1. The villain opened a rift to the shadow world, then launched a slingshot pellet.
2. The villain sent out creeping vines, then spun every compass in town.
3. The villain sent out creeping vines, then blinded the guards with flashlights.
4. The villain whispered across the void, then blinded the guards with flashlights.
5. The villain whispered across the void, then broadcasted static over ham radio.
6. The villain blasted a telepathic wave, then jammed all walkie talkies.
7. The villain whispered across the void, then spun every compass in town.
8. The villain sent out creeping vines, then launched a slingshot pellet.
9. The villain sent out creeping vines, then jammed all walkie talkies.
10. The villain zapped the radio tower, then spun every compass in town.
11. The villain opened a rift to the shadow world, then jammed all walkie talkies.
12. The villain opened a rift to the shadow world, then broadcasted static over ham radio.

Answer Key

The Shadow Realm Mystery

Culprit: Bob N

Portal Warp · Slingshot Shot · Left Handed · Shaggy Mullet · Loud Music

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

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE A FLASHLIGHT ARRAY"

$7 \times 1 = 7$ (T) · $5 \times 7 = 35$ (E) · $2 \times 11 = 22$ (S) · $12 \times 8 = 96$ (N) · $3 \times 10 = 30$ (V) · $9 \times 6 = 54$ (U) · $2 \times 7 = 14$ (A) · $6 \times 4 = 24$ (O) · $3 \times 7 = 21$ (F) · $10 \times 1 = 10$ (G) · $1 \times 2 = 2$ (H) · $3 \times 11 = 33$ (I) · $1 \times 1 = 1$ (R) · $11 \times 11 = 121$ (L) · $12 \times 5 = 60$ (Y) · $9 \times 9 = 81$ (D)

Clue 2 (Word problems): "LEFT HANDED"

There were 108 walkie talkies. 5 were used up. How many walkie talkies are left? = 103 (L) · There were 79 waffles. 10 were used up. How many waffles are left? = 69 (F) · Sheriff found 22 compasses yesterday and 16 more today. How many compasses in all? = 38 (H) · There were 28 walkie talkies. 5 were used up. How many walkie talkies are left? = 23 (N) · There were 106 cassette tapes. 5 were used up. How many cassette tapes are left? = 101 (A) · Sheriff found 65 cassette tapes yesterday and 37 more today. How many cassette tapes in all? = 102 (T) · Sheriff found 93 waffles yesterday and 22 more today. How many waffles in all? = 115 (E)

Clue 3 (Multi-step word problems): "LOUD MUSIC"

Sheriff collected 10 compasses in the morning and 310 compasses in the afternoon, then split them equally among 4 AV Club. How many compasses did each get? = 80 (L) · There were 124 cassette tapes in all. 1 AV Club used 9 cassette tapes each. The other 5 AV Club shared the rest equally. How many cassette tapes did each of the other AV Club get? = 23 (I) · Sheriff earned 5 compasses in each of 2 rounds, plus 32 bonus compasses. Then 11 compasses were lost. How many compasses are left? = 31 (O) · Sheriff collected 86 waffles in the morning and 86 waffles in the afternoon, then split them equally among 2 AV Club. How many waffles did each get? = 86 (U) · Sheriff collected 8 compasses in the morning and 62 compasses in the afternoon, then split them equally among 5 AV Club. How many compasses did each get? = 14 (D) · Sheriff collected 35 cassette tapes in the morning and 199 cassette tapes in the afternoon, then split them equally among 3 AV Club. How many cassette tapes did each get? = 78 (S) · Sheriff filled 5 boxes with 2 cassette tapes each, then found 74 more cassette tapes. How many cassette tapes are there in all? = 84 (M)

Clue 4 (Percentages): "SHAGGY MULLET HAIR WAS FOUND ON THE VINE"

25% of 24 = 6 (S) · 5% of 420 = 21 (I) · 25% of 20 = 5 (N) · 5% of 320 = 16 (H) · 5% of 880 = 44 (A) · 10% of 290 = 29 (O) · 40% of 20 = 8 (E) · 50% of 40 = 20 (U) · 10% of 370 = 37 (F) · 10% of 230 = 23 (V) · 20% of 205 = 41 (L) · 25% of 112 = 28 (W) · 10% of 340 = 34 (T) · 10% of 120 = 12 (R) · 20% of 70 = 14 (G) · 25% of 144 = 36 (D) · 25% of 68 = 17 (Y) · 20% of 125 = 25 (M)

Clue 5 (Missing addends): surviving statement is box 8 → Bob N

$15 + \underline{\quad} = 20 = 5$ · $18 + \underline{\quad} = 29 = 11$ · $33 + \underline{\quad} = 39 = 6$ · $38 + \underline{\quad} = 40 = 2$ · $33 + \underline{\quad} = 45 = 12$ · $22 + \underline{\quad} = 29 = 7$ · $28 + \underline{\quad} = 29 = 1$ · $13 + \underline{\quad} = 17 = 4$ · $18 + \underline{\quad} = 28 = 10$ · $17 + \underline{\quad} = 20 = 3$ · $40 + \underline{\quad} = 49 = 9$