



Mystery of the Shadow Rift

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

Detective: _____ Date: _____

A strange tear in space has opened near the town lab, and the Shadow Phantom is causing chaotic power surges! Chief Guard Miller needs your detective team to solve the clues and stop the villain before midnight.

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 Phantom is _____

Possible suspects

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

NAME	MAIN POWER	EXTRA ABILITY	HAND PREFERENCE	HAIRSTYLE	WEAKNESS
Dustin	Portal Blast	Static Flash	Left Handed	Messy Bowl Cut	Waffle Crumbs
Bob	Telekinesis	Fire Spark	Left Handed	Messy Bowl Cut	Waffle Crumbs
Billy	Shadow Cloak	Fire Spark	Left Handed	Curly Buzzcut	Waffle Crumbs
Lucas	Portal Blast	Echo Pulse	Right Handed	Messy Bowl Cut	Waffle Crumbs
Joyce	Portal Blast	Gravity Flip	Left Handed	Messy Bowl Cut	Waffle Crumbs
Eddie	Portal Blast	Gravity Flip	Left Handed	Messy Bowl Cut	Bright Flashlight
Argyle	Sonic Screech	Crystal Shield	Left Handed	Slicked Spikes	Bright Flashlight
Hopper	Mind Freeze	Echo Pulse	Left Handed	Messy Bowl Cut	Waffle Crumbs
Murray	Portal Blast	Gravity Flip	Right Handed	Curly Buzzcut	Bright Flashlight
Mike	Shadow Cloak	Gravity Flip	Left Handed	Slicked Spikes	Blaring Boombox
Jonathan	Portal Blast	Gravity Flip	Right Handed	Messy Bowl Cut	Blaring Boombox
Eleven	Telekinesis	Static Flash	Left Handed	Messy Bowl Cut	Blaring Boombox
Robin	Telekinesis	Crystal Shield	Right Handed	Slicked Spikes	Bright Flashlight
Wayne	Mind Freeze	Gravity Flip	Left Handed	Messy Bowl Cut	Waffle Crumbs
Gareth	Mind Freeze	Fire Spark	Right Handed	Messy Bowl Cut	Waffle Crumbs
Vickie	Mind Freeze	Echo Pulse	Right Handed	Slicked Spikes	Blaring Boombox
Eden	Portal Blast	Echo Pulse	Right Handed	Curly Buzzcut	Blaring Boombox
Fred	Shadow Cloak	Static Flash	Right Handed	Messy Bowl Cut	Waffle Crumbs
Nancy	Portal Blast	Crystal Shield	Right Handed	Slicked Spikes	Bright Flashlight
Max	Sonic Screech	Gravity Flip	Right Handed	Curly Buzzcut	Blaring Boombox
Steve	Shadow Cloak	Crystal Shield	Left Handed	Curly Buzzcut	Bright Flashlight

CLUE 1

Multiplication facts (1-12)

Officer Jim inspects rows of storage crates at the lab to calculate total flashlights.

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

T																T
44	22	144	42	120	32	32	18	120	15	5	27	144	121	15	27	44
63	121	144	144	55	22	27	14	63	32	121	144					

$4 \times 11 = \square \rightarrow \boxed{\text{T}}$

$5 \times 11 = \square \rightarrow \boxed{\text{C}}$

$1 \times 5 = \square \rightarrow \boxed{\text{D}}$

$6 \times 7 = \square \rightarrow \boxed{\text{V}}$

$2 \times 11 = \square \rightarrow \boxed{\text{H}}$

$2 \times 9 = \square \rightarrow \boxed{\text{A}}$

$8 \times 4 = \square \rightarrow \boxed{\text{L}}$

$3 \times 5 = \square \rightarrow \boxed{\text{N}}$

$12 \times 10 = \square \rightarrow \boxed{\text{I}}$

$3 \times 9 = \square \rightarrow \boxed{\text{O}}$

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

$9 \times 7 = \square \rightarrow \boxed{\text{U}}$

$12 \times 12 = \square \rightarrow \boxed{\text{E}}$

$2 \times 7 = \square \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 2

Multi-step word problems

The AV Club packs walkie talkies and extra batteries for night patrol in several steps.

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 .

69 58 24 57 81 83 9 58

There were 348 waffles in all. 3 waffles were set aside. The rest were shared equally among 5 AV Club. How many waffles did each get?

Answer: → L

Officer Jim filled 6 boxes with 9 waffles each, then found 29 more waffles. How many waffles are there in all?

Answer: → A

Officer Jim earned 2 waffles in each of 2 rounds, plus 57 bonus waffles. Then 4 waffles were lost. How many waffles are left?

Answer: → T

There were 553 batteries in all. 31 batteries were set aside. The rest were shared equally among 9 AV Club. How many batteries did each get?

Answer: → E

There were 27 waffles in all. 9 waffles were set aside. The rest were shared equally among 2 AV Club. How many waffles did each get?

Answer: → N

Officer Jim earned 7 cassette tapes in each of 4 rounds, plus 64 bonus cassette tapes. Then 11 cassette tapes were lost. How many cassette tapes are left?

Answer: → H

Officer Jim collected 79 cassette tapes in the morning and 65 cassette tapes in the afternoon, then split them equally among 6 AV Club. How many cassette tapes did each get?

Answer: → F

Scratch space:

CLUE 3

Word problems

The detective team tracks signal strength across the town to find the shadow portal.

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

Someone scared the villain off with W U M B S .

81 8 11 11 6 20 75 56

Officer Jim found 3 flashlights yesterday and 78 more today. How many flashlights in all?

Answer: → W

There were 79 walkie talkies. 4 were used up. How many walkie talkies are left?

Answer: → C

There were 15 waffles. 4 were used up. How many waffles are left?

Answer: → F

Officer Jim found 19 flashlights yesterday and 37 more today. How many flashlights in all?

Answer: → R

Officer Jim found 16 waffles yesterday and 4 more today. How many waffles in all?

Answer: → E

Officer Jim lined up 3 rows of 2 walkie talkies. How many walkie talkies in all?

Answer: → L

Officer Jim found 5 batteries yesterday and 3 more today. How many batteries in all?

Answer: → A

Scratch space:

CLUE 4

Subtraction

After a sudden power surge, Chief Miller counts how many waffles remain in the freezer.

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

T																		
4259	6207	6482	1142	5071	6482	2883	6482	6207	4257	8865	2560	6683	5071	7161	1142	6683	6467	4257

											T
5652	6482	1142	1142	1722	2991	6683	3260	2560	5071	5831	4259

$7718 - 3459 = \square \rightarrow \text{**T**}$

$7926 - 2855 = \square \rightarrow \text{**C**}$

$4444 - 2722 = \square \rightarrow \text{**Y**}$

$6907 - 2650 = \square \rightarrow \text{**A**}$

$7063 - 4503 = \square \rightarrow \text{**L**}$

$4936 - 1676 = \square \rightarrow \text{**W**}$

$8230 - 2399 = \square \rightarrow \text{**U**}$

$10104 - 3622 = \square \rightarrow \text{**E**}$

$13125 - 4260 = \square \rightarrow \text{**D**}$

$7745 - 4754 = \square \rightarrow \text{**B**}$

$8514 - 1831 = \square \rightarrow \text{**O**}$

$8961 - 3309 = \square \rightarrow \text{**M**}$

$10797 - 4330 = \square \rightarrow \text{**F**}$

$10724 - 4517 = \square \rightarrow \text{**H**}$

$2308 - 1166 = \square \rightarrow \text{**S**}$

$6458 - 3575 = \square \rightarrow \text{**N**}$

$11289 - 4128 = \square \rightarrow \text{**K**}$

Scratch space:

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

Dustin needs to find the missing energy value to restore power to the radio tower.

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:

$17 + \underline{\quad} = 19$

$20 + \underline{\quad} = 21$

$37 + \underline{\quad} = 45$

$25 + \underline{\quad} = 30$

$7 + \underline{\quad} = 11$

$21 + \underline{\quad} = 27$

$34 + \underline{\quad} = 45$

$12 + \underline{\quad} = 19$

$18 + \underline{\quad} = 21$

$5 + \underline{\quad} = 17$

$28 + \underline{\quad} = 37$

Step 2 - cross out the sentence with each answer:

1. The villain moving objects with mind, then sparking hot fire.
2. The villain opening dark portals, then flipping the room gravity.
3. The villain opening dark portals, then raising a crystal shield.
4. The villain freezing the room, then raising a crystal shield.
5. The villain hiding in dark shadows, then flipping the room gravity.
6. The villain hiding in dark shadows, then raising a crystal shield.
7. The villain moving objects with mind, then flashing bright static.
8. The villain freezing the room, then flipping the room gravity.
9. The villain moving objects with mind, then flipping the room gravity.
10. The villain opening dark portals, then flashing bright static.
11. The villain screeching loudly, then raising a crystal shield.
12. The villain screeching loudly, then flashing bright static.

Answer Key

Mystery of the Shadow Rift

Culprit: Dustin

Portal Blast · Static Flash · Left Handed · Messy Bowl Cut · Waffle Crumbs

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE ECHO PULSE"

$4 \times 11 = 44$ (T) · $5 \times 11 = 55$ (C) · $1 \times 5 = 5$ (D) · $6 \times 7 = 42$ (V) · $2 \times 11 = 22$ (H) · $2 \times 9 = 18$ (A) · $8 \times 4 = 32$ (L) · $3 \times 5 = 15$ (N) · $12 \times 10 = 120$ (I) · $3 \times 9 = 27$ (O) · $11 \times 11 = 121$ (S) · $9 \times 7 = 63$ (U) · $12 \times 12 = 144$ (E) · $2 \times 7 = 14$ (P)

Clue 2 (Multi-step word problems): "LEFT HANDED"

There were 348 waffles in all. 3 waffles were set aside. The rest were shared equally among 5 AV Club. How many waffles did each get? = 69 (L) · Officer Jim filled 6 boxes with 9 waffles each, then found 29 more waffles. How many waffles are there in all? = 83 (A) · Officer Jim earned 2 waffles in each of 2 rounds, plus 57 bonus waffles. Then 4 waffles were lost. How many waffles are left? = 57 (T) · There were 553 batteries in all. 31 batteries were set aside. The rest were shared equally among 9 AV Club. How many batteries did each get? = 58 (E) · There were 27 waffles in all. 9 waffles were set aside. The rest were shared equally among 2 AV Club. How many waffles did each get? = 9 (N) · Officer Jim earned 7 cassette tapes in each of 4 rounds, plus 64 bonus cassette tapes. Then 11 cassette tapes were lost. How many cassette tapes are left? = 81 (H) · Officer Jim collected 79 cassette tapes in the morning and 65 cassette tapes in the afternoon, then split them equally among 6 AV Club. How many cassette tapes did each get? = 24 (F)

Clue 3 (Word problems): "WAFFLE CRUMBS"

Officer Jim found 3 flashlights yesterday and 78 more today. How many flashlights in all? = 81 (W) · There were 79 walkie talkies. 4 were used up. How many walkie talkies are left? = 75 (C) · There were 15 waffles. 4 were used up. How many waffles are left? = 11 (F) · Officer Jim found 19 flashlights yesterday and 37 more today. How many flashlights in all? = 56 (R) · Officer Jim found 16 waffles yesterday and 4 more today. How many waffles in all? = 20 (E) · Officer Jim lined up 3 rows of 2 walkie talkies. How many walkie talkies in all? = 6 (L) · Officer Jim found 5 batteries yesterday and 3 more today. How many batteries in all? = 8 (A)

Clue 4 (Subtraction): "THE SCENE HAD LOCKS OF A MESSY BOWL CUT"

$7718 - 3459 = 4259$ (T) · $7926 - 2855 = 5071$ (C) · $4444 - 2722 = 1722$ (Y) · $6907 - 2650 = 4257$ (A) · $7063 - 4503 = 2560$ (L) · $4936 - 1676 = 3260$ (W) · $8230 - 2399 = 5831$ (U) · $10104 - 3622 = 6482$ (E) · $13125 - 4260 = 8865$ (D) · $7745 - 4754 = 2991$ (B) · $8514 - 1831 = 6683$ (O) · $8961 - 3309 = 5652$ (M) · $10797 - 4330 = 6467$ (F) · $10724 - 4517 = 6207$ (H) · $2308 - 1166 = 1142$ (S) · $6458 - 3575 = 2883$ (N) · $11289 - 4128 = 7161$ (K)

Clue 5 (Missing addends): surviving statement is box 10 → Dustin

$17 + \underline{\quad} = 19 = 2$ · $20 + \underline{\quad} = 21 = 1$ · $37 + \underline{\quad} = 45 = 8$ · $25 + \underline{\quad} = 30 = 5$ · $7 + \underline{\quad} = 11 = 4$ · $21 + \underline{\quad} = 27 = 6$ · $34 + \underline{\quad} = 45 = 11$ · $12 + \underline{\quad} = 19 = 7$ · $18 + \underline{\quad} = 21 = 3$ · $5 + \underline{\quad} = 17 = 12$ · $28 + \underline{\quad} = 37 = 9$