



The Tornado Alley Mystery

Grade 3 math · Addition, Place value, Rounding, Subtraction, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

A sneaky rogue chaser sabotaged the radar van during a giant storm! Decode the weather logs to discover who did it before the next supercell hits.

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 Rogue Chaser 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	VEHICLE UPGRADE	EQUIPMENT STYLE	HAIR STYLE	DISTRACTION
Jack Baker	Doppler Radar	Snorkel Intake	Goggles	Ponytail	Loud Static
Chloe Diaz	Anemometer	Armor Plating	Earphones	Ponytail	Cold Coffee
Samaria Davis	Doppler Radar	Armor Plating	Goggles	Ponytail	Bright Flash
Kelly Vance	Barometer	All Terrain Tires	Earphones	Buzz Cut	Bright Flash
Noah Wright	Anemometer	Hail Shield	Earphones	Buzz Cut	Cold Coffee
Kira Brooks	Anemometer	All Terrain Tires	Goggles	Buzz Cut	Bright Flash
Ivy Chen	Anemometer	Armor Plating	Earphones	Buzz Cut	Bright Flash
David Ross	Drone Launcher	Winch System	Goggles	Ponytail	Bright Flash
Maya Lin	Anemometer	Snorkel Intake	Goggles	Ponytail	Bright Flash
Ben Carter	Barometer	Winch System	Goggles	Messy Hair	Cold Coffee
Elena Gomez	Barometer	Snorkel Intake	Earphones	Ponytail	Bright Flash
Frankie Hill	Anemometer	Armor Plating	Goggles	Ponytail	Cold Coffee
Alex Storm	Anemometer	Armor Plating	Earphones	Messy Hair	Loud Static
Sean Walsh	Anemometer	Winch System	Goggles	Ponytail	Bright Flash
Reed Timmer	Drone Launcher	Snorkel Intake	Goggles	Ponytail	Cold Coffee
Jim Cantore	Doppler Radar	All Terrain Tires	Earphones	Buzz Cut	Cold Coffee
Grace Park	Barometer	Snorkel Intake	Goggles	Buzz Cut	Cold Coffee
Hank Miller	Anemometer	All Terrain Tires	Earphones	Buzz Cut	Cold Coffee
Rosa Martinez	Lightning Sensor	Winch System	Goggles	Messy Hair	Bright Flash
Leo Vance	Drone Launcher	Armor Plating	Goggles	Ponytail	Bright Flash
Quinn Young	Barometer	Snorkel Intake	Goggles	Ponytail	Bright Flash

CLUE 1 Addition

We tallied all the weather probes left in the storage van to narrow down the evidence list.

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

T									T								T
499	681	747	579	480	579	909	747	608	499	711	932	747	579	356	932	499	
													T				
480	579	747	787	406	253	356	608	681	579	923	579	499	747	390			

$193 + 306 = \square \rightarrow \boxed{\text{T}}$

$250 + 106 = \square \rightarrow \boxed{\text{N}}$

$571 + 352 = \square \rightarrow \boxed{\text{Y}}$

$288 + 423 = \square \rightarrow \boxed{\text{D}}$

$354 + 225 = \square \rightarrow \boxed{\text{S}}$

$378 + 531 = \square \rightarrow \boxed{\text{P}}$

$93 + 160 = \square \rightarrow \boxed{\text{I}}$

$145 + 335 = \square \rightarrow \boxed{\text{U}}$

$180 + 210 = \square \rightarrow \boxed{\text{M}}$

$351 + 396 = \square \rightarrow \boxed{\text{E}}$

$329 + 352 = \square \rightarrow \boxed{\text{H}}$

$289 + 319 = \square \rightarrow \boxed{\text{C}}$

$442 + 345 = \square \rightarrow \boxed{\text{A}}$

$187 + 219 = \square \rightarrow \boxed{\text{W}}$

$530 + 402 = \square \rightarrow \boxed{\text{O}}$

Scratch space:

CLUE 2 Place value

We checked the digital display on the wind gauge to analyze the value of each digit.

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

T					T								T		
600	40	10	6000	300	600	3000	10	20	20	20	500	6000	600	40	10

T					T														
600	500	30	80	10	600	6000	10	500	30	300	3000	80	80	9000	80	80	50	10	20

What is the value of the 6 in 8,673? → **T**

What is the value of the 4 in 642? → **H**

What is the value of the 8 in 585? → **G**

What is the value of the 5 in 352? → **L**

What is the value of the 3 in 382? → **I**

What is the value of the 3 in 234? → **R**

What is the value of the 5 in 570? → **A**

What is the value of the 6 in 36,870? → **W**

What is the value of the 2 in 7,120? → **S**

What is the value of the 1 in 517? → **E**

What is the value of the 3 in 3,696? → **N**

What is the value of the 9 in 29,286? → **O**

Scratch space:

CLUE 3 Rounding

The storm radar screen rounds wind speeds to the nearest ten to clear up the display.

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

A									A									
30	5000	2000	20	7000	4000	60	80	40	30	50	4000	70	80	40	20	7000	4000	60

	A								A				
80	30	200	6000	600	60	4000	6000	500	4000	30	50	6000	2000

Round 33 to the nearest ten → **A**

Round 19 to the nearest ten → **I**

Round 42 to the nearest ten → **L**

Round 72 to the nearest ten → **O**

Round 528 to the nearest hundred → **C**

Round 59 to the nearest ten → **T**

Round 80 to the nearest ten → **F**

Round 2,182 to the nearest thousand → **R**

Round 229 to the nearest hundred → **Z**

Round 3,942 to the nearest thousand → **H**

Round 6,421 to the nearest thousand → **E**

Round 6,695 to the nearest thousand → **G**

Round 577 to the nearest hundred → **D**

Round 47 to the nearest ten → **S**

Round 5,387 to the nearest thousand → **B**

Scratch space:

CLUE 4
Subtraction

We subtracted the starting cloud temperature from the final reading to trace the path.

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

A				A									A			
557	821	331	880	557	256	153	657	225	188	657	256	793	331	557	867	601
	A				A											
845	557	867	880	347	557	821	601	454	225	331	301	454	845	867	256	153

$684 - 127 = \square \rightarrow \text{A}$

$499 - 198 = \square \rightarrow \text{B}$

$504 - 50 = \square \rightarrow \text{E}$

$158 - 5 = \square \rightarrow \text{D}$

$325 - 100 = \square \rightarrow \text{F}$

$1251 - 384 = \square \rightarrow \text{I}$

$933 - 88 = \square \rightarrow \text{H}$

$1280 - 400 = \square \rightarrow \text{R}$

$606 - 275 = \square \rightarrow \text{T}$

$778 - 177 = \square \rightarrow \text{L}$

$1136 - 315 = \square \rightarrow \text{S}$

$1193 - 400 = \square \rightarrow \text{Y}$

$438 - 250 = \square \rightarrow \text{P}$

$838 - 181 = \square \rightarrow \text{O}$

$717 - 370 = \square \rightarrow \text{W}$

$399 - 143 = \square \rightarrow \text{N}$

Scratch space:

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

We divided the remaining tracking beacons equally among the search vehicles.

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:

$6 \div 2 = \boxed{}$

$8 \div 8 = \boxed{}$

$15 \div 3 = \boxed{}$

$66 \div 6 = \boxed{}$

$84 \div 7 = \boxed{}$

$8 \div 1 = \boxed{}$

$36 \div 9 = \boxed{}$

$27 \div 3 = \boxed{}$

$4 \div 2 = \boxed{}$

$72 \div 12 = \boxed{}$

$49 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain scanned the storm clouds, then drove through the heavy hail.
2. The villain launched a probe drone, then splashed through deep water.
3. The villain launched a probe drone, then drove through the heavy hail.
4. The villain tracked the strike location, then crossed the muddy field.
5. The villain checked the air pressure, then splashed through deep water.
6. The villain tracked the strike location, then splashed through deep water.
7. The villain measured the wind speed, then pulled the trapped truck.
8. The villain measured the wind speed, then crossed the muddy field.
9. The villain checked the air pressure, then drove through the heavy hail.
10. The villain measured the wind speed, then splashed through deep water.
11. The villain scanned the storm clouds, then splashed through deep water.
12. The villain launched a probe drone, then blocked flying debris.

Answer Key

The Tornado Alley Mystery

Culprit: Maya Lin

Anemometer · Snorkel Intake · Goggles · Ponytail · Bright Flash

Trail: Start 21 → Clue 1 17 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE SUSPECT DOES NOT USE A WINCH SYSTEM"

$193 + 306 = 499$ (T) · $250 + 106 = 356$ (N) · $571 + 352 = 923$ (Y) · $288 + 423 = 711$ (D) · $354 + 225 = 579$ (S) · $378 + 531 = 909$ (P) · $93 + 160 = 253$ (I) · $145 + 335 = 480$ (U) · $180 + 210 = 390$ (M) · $351 + 396 = 747$ (E) · $329 + 352 = 681$ (H) · $289 + 319 = 608$ (C) · $442 + 345 = 787$ (A) · $187 + 219 = 406$ (W) · $530 + 402 = 932$ (O)

Clue 2 (Place value): "THE WITNESS SAW THE TARGET WEARING GOGGLES"

What is the value of the 6 in 8,673? = 600 (T) · What is the value of the 4 in 642? = 40 (H) · What is the value of the 8 in 585? = 80 (G) · What is the value of the 5 in 352? = 50 (L) · What is the value of the 3 in 382? = 300 (I) · What is the value of the 3 in 234? = 30 (R) · What is the value of the 5 in 570? = 500 (A) · What is the value of the 6 in 36,870? = 6000 (W) · What is the value of the 2 in 7,120? = 20 (S) · What is the value of the 1 in 517? = 10 (E) · What is the value of the 3 in 3,696? = 3000 (N) · What is the value of the 9 in 29,286? = 9000 (O)

Clue 3 (Rounding): "A BRIGHT FLASH OF LIGHT FAZED THE CHASER"

Round 33 to the nearest ten = 30 (A) · Round 19 to the nearest ten = 20 (I) · Round 42 to the nearest ten = 40 (L) · Round 72 to the nearest ten = 70 (O) · Round 528 to the nearest hundred = 500 (C) · Round 59 to the nearest ten = 60 (T) · Round 80 to the nearest ten = 80 (F) · Round 2,182 to the nearest thousand = 2000 (R) · Round 229 to the nearest hundred = 200 (Z) · Round 3,942 to the nearest thousand = 4000 (H) · Round 6,421 to the nearest thousand = 6000 (E) · Round 6,695 to the nearest thousand = 7000 (G) · Round 577 to the nearest hundred = 600 (D) · Round 47 to the nearest ten = 50 (S) · Round 5,387 to the nearest thousand = 5000 (B)

Clue 4 (Subtraction): "A STRAND OF PONYTAIL HAIR WAS LEFT BEHIND"

$684 - 127 = 557$ (A) · $499 - 198 = 301$ (B) · $504 - 50 = 454$ (E) · $158 - 5 = 153$ (D) · $325 - 100 = 225$ (F) · $1251 - 384 = 867$ (I) · $933 - 88 = 845$ (H) · $1280 - 400 = 880$ (R) · $606 - 275 = 331$ (T) · $778 - 177 = 601$ (L) · $1136 - 315 = 821$ (S) · $1193 - 400 = 793$ (Y) · $438 - 250 = 188$ (P) · $838 - 181 = 657$ (O) · $717 - 370 = 347$ (W) · $399 - 143 = 256$ (N)

Clue 5 (Division facts (1-12)): surviving statement is box 10 → Maya Lin

$6 \div 2 = 3$ · $8 \div 8 = 1$ · $15 \div 3 = 5$ · $66 \div 6 = 11$ · $84 \div 7 = 12$ · $8 \div 1 = 8$ · $36 \div 9 = 4$ · $27 \div 3 = 9$ · $4 \div 2 = 2$ · $72 \div 12 = 6$ · $49 \div 7 = 7$