



The Case of the Candy Prix Saboteur

Grade 7 math · Integers, Percentages, Order of operations, Exponents, Two-step equations · Reading level grades 7-9

Detective: _____ **Date:** _____

During the championship finals at the Nitro Candy Raceway, someone tampered with the leader board supply trucks and spilled syrup across the pit lane. The Pit Crew Chief called in detective support to analyze track telemetry and narrow down the suspects before the checkered flag drops.

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 saboteur is _____

Possible suspects

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

NAME	CAR TYPE	SNACK ENGINE	GRIP STYLE	HELMET STRIPE	PIT STOP FLAW
Caitlin Clark	Nitro Muscle Car	Salty Pretzel Booster	Left Handed Steering	Bright Red Stripe	Slippy Clutch
LeBron James	Licorice Dragster	Cotton Candy Fuel	Left Handed Steering	Electric Blue Stripe	Slow Tire Swap
Giannis Antetokounmpo	Turbo Roadster	Hot Cocoa Exhaust	Left Handed Steering	Neon Green Stripe	Slippy Clutch
Bubba Wallace	Licorice Dragster	Salty Pretzel Booster	Left Handed Steering	Electric Blue Stripe	Slow Tire Swap
Max Verstappen	Fudge Formula One	Caramel Supercharger	Left Handed Steering	Neon Green Stripe	Slippy Clutch
Lionel Messi	Licorice Dragster	Hot Cocoa Exhaust	Right Handed Steering	Electric Blue Stripe	Slippy Clutch
Cristiano Ronaldo	Nitro Muscle Car	Caramel Supercharger	Right Handed Steering	Bright Red Stripe	Slippy Clutch
Lando Norris	Nitro Muscle Car	Cotton Candy Fuel	Left Handed Steering	Neon Green Stripe	Slow Tire Swap
Tiger Woods	Licorice Dragster	Salty Pretzel Booster	Left Handed Steering	Neon Green Stripe	Slippy Clutch
Shaquille O Neal	Licorice Dragster	Peppermint Nitro	Right Handed Steering	Electric Blue Stripe	Slippy Clutch
Danica Patrick	Fudge Formula One	Peppermint Nitro	Left Handed Steering	Electric Blue Stripe	Overheated Radiator
Mario Andretti	Turbo Roadster	Peppermint Nitro	Right Handed Steering	Electric Blue Stripe	Slippy Clutch
Usain Bolt	Turbo Roadster	Hot Cocoa Exhaust	Left Handed Steering	Bright Red Stripe	Slow Tire Swap
Naomi Osaka	Turbo Roadster	Peppermint Nitro	Left Handed Steering	Neon Green Stripe	Slippy Clutch
Simone Biles	Turbo Roadster	Peppermint Nitro	Right Handed Steering	Electric Blue Stripe	Slow Tire Swap
Shohei Ohtani	Licorice Dragster	Salty Pretzel Booster	Right Handed Steering	Neon Green Stripe	Slippy Clutch
Serena Williams	Gummy Dune Buggy	Salty Pretzel Booster	Right Handed Steering	Electric Blue Stripe	Slippy Clutch
Jeff Gordon	Licorice Dragster	Caramel Supercharger	Left Handed Steering	Electric Blue Stripe	Slow Tire Swap
Travis Kelce	Licorice Dragster	Salty Pretzel Booster	Right Handed Steering	Electric Blue Stripe	Overheated Radiator
Patrick Mahomes	Fudge Formula One	Hot Cocoa Exhaust	Left Handed Steering	Neon Green Stripe	Slow Tire Swap
Alex Morgan	Licorice Dragster	Caramel Supercharger	Left Handed Steering	Neon Green Stripe	Slippy Clutch

CLUE 1 Integers

The raceway telemetry logged temperature shifts above and below zero degrees on the track. Calculating the net integer change reveals the first clue.

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

T								T											T
10	25	23	30	21	28	13	10	23	12	15	29	13	23	30	14	13	10		
12	30	23	18	23	18	18	23	15	27	16	14	10	14	16	10	15	13		

$(-4) + 14 = \square \rightarrow \boxed{\text{T}}$	$17 - (-1) = \square \rightarrow \boxed{\text{P}}$	$24 - (-1) = \square \rightarrow \boxed{\text{H}}$
$(-12) + 24 = \square \rightarrow \boxed{\text{U}}$	$(-15) + 44 = \square \rightarrow \boxed{\text{D}}$	$22 - (-8) = \square \rightarrow \boxed{\text{S}}$
$(-2) + 18 = \square \rightarrow \boxed{\text{I}}$	$17 - (-4) = \square \rightarrow \boxed{\text{A}}$	$25 - (-3) = \square \rightarrow \boxed{\text{B}}$
$8 - (-7) = \square \rightarrow \boxed{\text{R}}$	$14 - (-13) = \square \rightarrow \boxed{\text{M}}$	$12 - (-11) = \square \rightarrow \boxed{\text{E}}$
$5 - (-8) = \square \rightarrow \boxed{\text{O}}$	$9 - (-5) = \square \rightarrow \boxed{\text{N}}$	

Scratch space:

CLUE 2 Percentages

The pit crew analyzed the fuel efficiency report to see what percentage of cotton candy octane remained in the tank, uncovering a key detail.

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

T										T		T					
4	38	29	44	2	44	32	29	13	4	44	4	29	29	59	29	46	

			T			T										
27	29	43	4	6	1	4	38	57	21	29	38	41	21	46		

$40\% \text{ of } 10 = \square \rightarrow \text{ T }$

$5\% \text{ of } 20 = \square \rightarrow \text{ I }$

$25\% \text{ of } 116 = \square \rightarrow \text{ E }$

$50\% \text{ of } 86 = \square \rightarrow \text{ F }$

$25\% \text{ of } 164 = \square \rightarrow \text{ A }$

$20\% \text{ of } 230 = \square \rightarrow \text{ D }$

$25\% \text{ of } 176 = \square \rightarrow \text{ S }$

$50\% \text{ of } 26 = \square \rightarrow \text{ C }$

$5\% \text{ of } 540 = \square \rightarrow \text{ L }$

$75\% \text{ of } 28 = \square \rightarrow \text{ N }$

$10\% \text{ of } 380 = \square \rightarrow \text{ H }$

$5\% \text{ of } 120 = \square \rightarrow \text{ W }$

$75\% \text{ of } 76 = \square \rightarrow \text{ O }$

$5\% \text{ of } 640 = \square \rightarrow \text{ P }$

$10\% \text{ of } 590 = \square \rightarrow \text{ R }$

$50\% \text{ of } 4 = \square \rightarrow \text{ U }$

Scratch space:

CLUE 3 Order of operations

To decode the locked lap-timer console, the mechanics must follow the precise order of operations on the diagnostic readout.

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

T																	
32	84	50	107	105	71	15	50	105	65	18	76	115	38	71	36	50	107
												T					
103	45	18	76	36	71	79	79	45	60	36	88	32	60	84			

$11 \times 3 - 1 = \square \rightarrow$ T	$9 \times 7 - 18 = \square \rightarrow$ Y	$9 \times 10 - 14 = \square \rightarrow$ S
$67 + 5 \times 8 = \square \rightarrow$ D	$80 + 2 \times 2 = \square \rightarrow$ H	$12 \times 9 - 5 = \square \rightarrow$ B
$38 + 6 \times 2 = \square \rightarrow$ E	$70 + 7 \times 5 = \square \rightarrow$ R	$6 \times 9 - 18 = \square \rightarrow$ L
$9 \times 4 - 21 = \square \rightarrow$ V	$10 \times 9 - 11 = \square \rightarrow$ P	$10 \times 4 - 22 = \square \rightarrow$ A
$10 \times 7 - 10 = \square \rightarrow$ C	$8 \times 7 - 18 = \square \rightarrow$ O	$11 \times 11 - 6 = \square \rightarrow$ F
$38 + 3 \times 9 = \square \rightarrow$ W	$65 + 3 \times 2 = \square \rightarrow$ I	$10 \times 9 - 2 = \square \rightarrow$ U

Scratch space:

CLUE 4 Exponents

Engine sensors calculated horsepower gains scaling exponentially with each turbo boost stage, unlocking another piece of evidence.

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

C															
9	100	25	64	256	100	400	27	289	121	400	400	27	289	128	100
169	64	289	169	225	256	64	64	169	400	121	256	343	361	64	

$3^2 = \square \rightarrow$ C	$20^2 = \square \rightarrow$ S	$15^2 = \square \rightarrow$ G	$3^3 = \square \rightarrow$ H
$4^3 = \square \rightarrow$ E	$19^2 = \square \rightarrow$ P	$13^2 = \square \rightarrow$ N	$2^7 = \square \rightarrow$ W
$2^8 = \square \rightarrow$ R	$17^2 = \square \rightarrow$ O	$10^2 = \square \rightarrow$ A	$7^3 = \square \rightarrow$ I
$11^2 = \square \rightarrow$ T	$5^2 = \square \rightarrow$ M		

Scratch space:

CLUE 5**Two-step equations - the last clue**

The head engineer set up a two-step equation balancing total lap time against penalty seconds to expose the final track secret.

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:

$4x + 4 = 20, x = \boxed{}$

$6x + 3 = 51, x = \boxed{}$

$4x + 4 = 8, x = \boxed{}$

$2x + 9 = 27, x = \boxed{}$

$2x + 12 = 36, x = \boxed{}$

$5x + 7 = 17, x = \boxed{}$

$4x + 3 = 23, x = \boxed{}$

$2x + 2 = 16, x = \boxed{}$

$4x + 6 = 46, x = \boxed{}$

$6x + 1 = 37, x = \boxed{}$

$4x + 2 = 14, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain drives a licorice dragster, then activates a caramel supercharger.
2. The villain drives a nitro muscle car, then runs on peppermint nitro.
3. The villain drives a nitro muscle car, then blasts hot cocoa exhaust.
4. The villain drives a fudge formula one, then activates a caramel supercharger.
5. The villain drives a turbo roadster, then runs on peppermint nitro.
6. The villain drives a nitro muscle car, then burns cotton candy fuel.
7. The villain drives a turbo roadster, then burns cotton candy fuel.
8. The villain drives a licorice dragster, then uses a salty pretzel booster.
9. The villain drives a turbo roadster, then uses a salty pretzel booster.
10. The villain drives a licorice dragster, then runs on peppermint nitro.
11. The villain drives a turbo roadster, then blasts hot cocoa exhaust.
12. The villain drives a gummy dune buggy, then runs on peppermint nitro.

Answer Key

The Case of the Candy Prix Saboteur

Culprit: Giannis Antetokounmpo

Turbo Roadster · Hot Cocoa Exhaust · Left Handed Steering · Neon Green Stripe · Slippery Clutch

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Integers): "THE SABOTEUR DOES NOT USE PEPPERMINT NITRO"

$(-4) + 14 = 10$ (T) · $17 - (-1) = 18$ (P) · $24 - (-1) = 25$ (H) · $(-12) + 24 = 12$ (U) · $(-15) + 44 = 29$ (D) · $22 - (-8) = 30$ (S) · $(-2) + 18 = 16$ (I) · $17 - (-4) = 21$ (A) · $25 - (-3) = 28$ (B) · $8 - (-7) = 15$ (R) · $14 - (-13) = 27$ (M) · $12 - (-11) = 23$ (E) · $5 - (-8) = 13$ (O) · $9 - (-5) = 14$ (N)

Clue 2 (Percentages): "THE SUSPECT STEERED LEFT WITH ONE HAND"

40% of 10 = 4 (T) · 5% of 20 = 1 (I) · 25% of 116 = 29 (E) · 50% of 86 = 43 (F) · 25% of 164 = 41 (A) · 20% of 230 = 46 (D) · 25% of 176 = 44 (S) · 50% of 26 = 13 (C) · 5% of 540 = 27 (L) · 75% of 28 = 21 (N) · 10% of 380 = 38 (H) · 5% of 120 = 6 (W) · 75% of 76 = 57 (O) · 5% of 640 = 32 (P) · 10% of 590 = 59 (R) · 50% of 4 = 2 (U)

Clue 3 (Order of operations): "THE DRIVER WAS FOILED BY A SLIPPERY CLUTCH"

$11 \times 3 - 1 = 32$ (T) · $9 \times 7 - 18 = 45$ (Y) · $9 \times 10 - 14 = 76$ (S) · $67 + 5 \times 8 = 107$ (D) · $80 + 2 \times 2 = 84$ (H) · $12 \times 9 - 5 = 103$ (B) · $38 + 6 \times 2 = 50$ (E) · $70 + 7 \times 5 = 105$ (R) · $6 \times 9 - 18 = 36$ (L) · $9 \times 4 - 21 = 15$ (V) · $10 \times 9 - 11 = 79$ (P) · $10 \times 4 - 22 = 18$ (A) · $10 \times 7 - 10 = 60$ (C) · $8 \times 7 - 18 = 38$ (O) · $11 \times 11 - 6 = 115$ (F) · $38 + 3 \times 9 = 65$ (W) · $65 + 3 \times 2 = 71$ (I) · $10 \times 9 - 2 = 88$ (U)

Clue 4 (Exponents): "CAMERA SHOTS SHOW A NEON GREEN STRIPE"

$3^2 = 9$ (C) · $20^2 = 400$ (S) · $15^2 = 225$ (G) · $3^3 = 27$ (H) · $4^3 = 64$ (E) · $19^2 = 361$ (P) · $13^2 = 169$ (N) · $2^7 = 128$ (W) · $2^8 = 256$ (R) · $17^2 = 289$ (O) · $10^2 = 100$ (A) · $7^3 = 343$ (I) · $11^2 = 121$ (T) · $5^2 = 25$ (M)

Clue 5 (Two-step equations): surviving statement is box 11 → Giannis Antetokounmpo

$4x + 4 = 20, x = 4$ · $6x + 3 = 51, x = 8$ · $4x + 4 = 8, x = 1$ · $2x + 9 = 27, x = 9$ · $2x + 12 = 36, x = 12$ · $5x + 7 = 17, x = 2$ · $4x + 3 = 23, x = 5$ · $2x + 2 = 16, x = 7$ · $4x + 6 = 46, x = 10$ · $6x + 1 = 37, x = 6$ · $4x + 2 = 14, x = 3$