



The Mystery of the Sabotaged Rocket Car

Grade 7 math · Fractions of a number, Integers, Percentages, Order of operations · Reading level grades 7-9

Detective: _____ Date: _____

At the Apex Stadium Circuit, high-speed rocket cars clash in the championship showdown. Right before kick-off, someone sabotaged the defending team car and made off with the golden engine core. Track down the rogue driver responsible before the grand final!

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 driver is _____

Possible suspects

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

NAME	DRIVE ABILITY	CAR GADGET	KICKING PREFERENCE	HEADGEAR	MECHANICAL FAULT
Bruno	Jump Jets	Oil Slicker	Left Footed	Carbon Fiber Mask	Low Fuel
Bukayo	Magnet Traction	Grapple Hook	Left Footed	Neon Helmet	Squeaky Brakes
Neymar	Jump Jets	Smoke Screen	Right Footed	Tinted Visor	Flat Tire
Samba	Nitro Boost	Laser Cutter	Left Footed	Carbon Fiber Mask	Low Fuel
Lionel	Nitro Boost	Grapple Hook	Right Footed	Tinted Visor	Squeaky Brakes
Zlatan	Magnet Traction	Oil Slicker	Left Footed	Tinted Visor	Squeaky Brakes
Jude	Jump Jets	Laser Cutter	Right Footed	Neon Helmet	Flat Tire
Marcus	Nitro Boost	EMP Blaster	Right Footed	Tinted Visor	Flat Tire
Marco	Jump Jets	Laser Cutter	Left Footed	Neon Helmet	Low Fuel
Pedri	Jump Jets	Laser Cutter	Right Footed	Carbon Fiber Mask	Low Fuel
Sonny	Jump Jets	Laser Cutter	Left Footed	Carbon Fiber Mask	Flat Tire
Jamal	Magnet Traction	Smoke Screen	Right Footed	Neon Helmet	Flat Tire
Luka	Sonic Shield	Oil Slicker	Left Footed	Carbon Fiber Mask	Low Fuel
Declan	Magnet Traction	Grapple Hook	Right Footed	Carbon Fiber Mask	Low Fuel
Gianluigi	Nitro Boost	Grapple Hook	Left Footed	Carbon Fiber Mask	Low Fuel
Kylian	Jump Jets	Oil Slicker	Left Footed	Neon Helmet	Low Fuel
Erling	Turbo Drift	Laser Cutter	Left Footed	Carbon Fiber Mask	Low Fuel
Cristiano	Nitro Boost	Grapple Hook	Right Footed	Neon Helmet	Squeaky Brakes
Virgil	Sonic Shield	Laser Cutter	Left Footed	Carbon Fiber Mask	Low Fuel
Thierry	Jump Jets	Grapple Hook	Left Footed	Carbon Fiber Mask	Squeaky Brakes
Didier	Jump Jets	EMP Blaster	Left Footed	Tinted Visor	Squeaky Brakes

Fractions of a number

To analyze the speed data, calculate the fraction of top-speed laps completed by the suspect.

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

A 2x10 grid of boxes. The top row contains the following sequence: an orange box with 'T', three empty boxes, an orange box with 'T', and seven empty boxes. The bottom row contains ten empty boxes. Below each box is a number. The numbers for the top row are: 13, 41, 59, 26, 30, 26, 52, 59, 43, 13, 46, 16, 59, 26, 42, 16, 13. The numbers for the bottom row are: 30, 26, 59, 56, 42, 16, 49, 39, 26, 39, 49, 43, 29, 59, 57.

T							T									
13	41	59	26	30	26	52	59	43	13	46	16	59	26	42	16	13
30	26	59	56	42	16	49	39	26	39	49	43	29	59	57		

$$2/6 \text{ of } 39 = \boxed{} \rightarrow \boxed{\text{T}}$$

5/10 of 118 = → **E**

$3/6$ of $112 = \boxed{} \rightarrow \boxed{\text{A}}$

$$2/5 \text{ of } 65 = \boxed{} \rightarrow \boxed{\text{S}}$$

$\frac{1}{4}$ of 184 = $\rightarrow$ **D**

$4/8$ of $86 = \square \rightarrow \boxed{\text{C}}$

$$3/10 \text{ of } 190 = \boxed{} \rightarrow \boxed{\text{R}}$$

2/6 of 87 = → **K**

$\frac{1}{4}$ of 164 = $\rightarrow$ **H**

5/10 of 60 = → **U**

5/10 of 84 = → **N**

$$\frac{1}{2} \text{ of } 98 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$8/10 \text{ of } 65 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$\frac{1}{6} \text{ of } 96 = \boxed{} \rightarrow \boxed{\text{O}}$$

6/10 of 65 = → **L**

Scratch space:

CLUE 2 Integers

Check the garage pit telemetry, where temperature gains and drops are recorded as positive and negative integers.

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

A																			
7	25	3	13	27	13	17	17	27	3	29	16	15	26	22	27	5	7	14	
13	17	10	22	29	17	22	27	4	3	16	3	29	7	25					

$$(-11) + 18 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$12 - (-15) = \boxed{} \rightarrow \boxed{\text{T}}$$

$$(-6) + 32 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$1 - (-14) = \boxed{} \rightarrow \boxed{\text{R}}$$

$$12 - (-13) = \boxed{} \rightarrow \boxed{\text{L}}$$

$$3 - (-11) = \boxed{} \rightarrow \boxed{\text{S}}$$

$$(-10) + 13 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$(-13) + 29 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$(-11) + 24 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$(-5) + 34 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$(-3) + 7 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$(-13) + 23 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$(-13) + 18 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$(-15) + 37 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$12 - (-5) = \boxed{} \rightarrow \boxed{\text{O}}$$

Scratch space:

CLUE 3
Percentages

Examine the stadium scoreboard, which measures player possession and shot accuracy as percentages.

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

T															
47	56	38	38	2	3	21	46	38	3	21	12	51	21	2	

	T											T				
2	47	12	14	57	57	23	13	48	57	51	13	47	56	23	15	51

32	14	38	23

$20\% \text{ of } 235 = \boxed{} \rightarrow \boxed{\text{T}}$

$50\% \text{ of } 26 = \boxed{} \rightarrow \boxed{\text{I}}$

$5\% \text{ of } 920 = \boxed{} \rightarrow \boxed{\text{P}}$

$75\% \text{ of } 76 = \boxed{} \rightarrow \boxed{\text{G}}$

$40\% \text{ of } 5 = \boxed{} \rightarrow \boxed{\text{S}}$

$40\% \text{ of } 140 = \boxed{} \rightarrow \boxed{\text{H}}$

$5\% \text{ of } 760 = \boxed{} \rightarrow \boxed{\text{E}}$

$75\% \text{ of } 64 = \boxed{} \rightarrow \boxed{\text{N}}$

$20\% \text{ of } 105 = \boxed{} \rightarrow \boxed{\text{A}}$

$5\% \text{ of } 640 = \boxed{} \rightarrow \boxed{\text{F}}$

$5\% \text{ of } 280 = \boxed{} \rightarrow \boxed{\text{U}}$

$20\% \text{ of } 75 = \boxed{} \rightarrow \boxed{\text{O}}$

$50\% \text{ of } 24 = \boxed{} \rightarrow \boxed{\text{R}}$

$25\% \text{ of } 12 = \boxed{} \rightarrow \boxed{\text{C}}$

$10\% \text{ of } 510 = \boxed{} \rightarrow \boxed{\text{W}}$

$50\% \text{ of } 46 = \boxed{} \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 4
Order of operations

Decode the main engine computer by following the strict order of operations on the diagnostic terminal.

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

P																	
47	83	61	46	61	22	42	16	58	46	58	34	45	42	91			
16	83	45	61	34	76	58	22	89	54	61	34	61	16	42	106	91	95

$5 \times 10 - 3 = \square \rightarrow \text{P}$

$65 + 3 \times 8 = \square \rightarrow \text{K}$

$9 \times 12 - 25 = \square \rightarrow \text{I}$

$7 \times 8 - 14 = \square \rightarrow \text{O}$

$6 \times 11 - 12 = \square \rightarrow \text{W}$

$61 + 6 \times 5 = \square \rightarrow \text{N}$

$12 + 2 \times 5 = \square \rightarrow \text{S}$

$43 + 7 \times 9 = \square \rightarrow \text{U}$

$12 \times 10 - 25 = \square \rightarrow \text{D}$

$8 \times 6 - 14 = \square \rightarrow \text{R}$

$34 + 3 \times 8 = \square \rightarrow \text{A}$

$4 + 2 \times 6 = \square \rightarrow \text{F}$

$6 \times 12 - 11 = \square \rightarrow \text{E}$

$64 + 6 \times 2 = \square \rightarrow \text{M}$

$27 + 9 \times 2 = \square \rightarrow \text{B}$

$14 + 4 \times 8 = \square \rightarrow \text{C}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

Calculate the fraction of pit-stop fuel reserves left in the storage tank to reveal the last 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:

$2/6 \text{ of } 27 = \boxed{}$

$3/6 \text{ of } 4 = \boxed{}$

$2/4 \text{ of } 8 = \boxed{}$

$1/6 \text{ of } 42 = \boxed{}$

$1/5 \text{ of } 25 = \boxed{}$

$4/6 \text{ of } 9 = \boxed{}$

$2/4 \text{ of } 24 = \boxed{}$

$1/10 \text{ of } 110 = \boxed{}$

$3/8 \text{ of } 8 = \boxed{}$

$4/6 \text{ of } 12 = \boxed{}$

$1/8 \text{ of } 80 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain activated the nitro boost, then shot a grapple hook.
2. The villain executed a turbo drift, then sliced with a laser cutter.
3. The villain fired the jump jets, then launched a smoke screen.
4. The villain activated the nitro boost, then sliced with a laser cutter.
5. The villain executed a turbo drift, then deployed an emp blaster.
6. The villain raised a sonic shield, then shot a grapple hook.
7. The villain executed a turbo drift, then launched a smoke screen.
8. The villain fired the jump jets, then spilled an oil slicker.
9. The villain raised a sonic shield, then sliced with a laser cutter.
10. The villain fired the jump jets, then shot a grapple hook.
11. The villain activated the nitro boost, then deployed an emp blaster.
12. The villain raised a sonic shield, then deployed an emp blaster.

Answer Key

The Mystery of the Sabotaged Rocket Car

Culprit: Gianluigi

Nitro Boost · Grapple Hook · Left Footed · Carbon Fiber Mask · Low Fuel

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

Clue 1 (Fractions of a number): "THE SUSPECT DOES NOT USE AN OIL SLICKER"

$2/6$ of 39 = 13 (T) · $5/10$ of 118 = 59 (E) · $3/6$ of 112 = 56 (A) · $2/5$ of 65 = 26 (S) · $1/4$ of 184 = 46 (D) · $4/8$ of 86 = 43 (C) · $3/10$ of 190 = 57 (R) · $2/6$ of 87 = 29 (K) · $1/4$ of 164 = 41 (H) · $5/10$ of 60 = 30 (U) · $5/10$ of 84 = 42 (N) · $1/2$ of 98 = 49 (I) · $8/10$ of 65 = 52 (P) · $1/6$ of 96 = 16 (O) · $6/10$ of 65 = 39 (L)

Clue 2 (Integers): "A LEFT FOOTED PRINT WAS FOUND ON THE PEDAL"

$(-11) + 18 = 7$ (A) · $12 - (-15) = 27$ (T) · $(-6) + 32 = 26$ (I) · $1 - (-14) = 15$ (R) · $12 - (-13) = 25$ (L) · $3 - (-11) = 14$ (S) · $(-10) + 13 = 3$ (E) · $(-13) + 29 = 16$ (P) · $(-11) + 24 = 13$ (F) · $(-5) + 34 = 29$ (D) · $(-3) + 7 = 4$ (H) · $(-13) + 23 = 10$ (U) · $(-13) + 18 = 5$ (W) · $(-15) + 37 = 22$ (N) · $12 - (-5) = 17$ (O)

Clue 3 (Percentages): "THE ESCAPE CAR WAS STRUGGLING WITH LOW FUEL"

20% of 235 = 47 (T) · 50% of 26 = 13 (I) · 5% of 920 = 46 (P) · 75% of 76 = 57 (G) · 40% of 5 = 2 (S) · 40% of 140 = 56 (H) · 5% of 760 = 38 (E) · 75% of 64 = 48 (N) · 20% of 105 = 21 (A) · 5% of 640 = 32 (F) · 5% of 280 = 14 (U) · 20% of 75 = 15 (O) · 50% of 24 = 12 (R) · 25% of 12 = 3 (C) · 10% of 510 = 51 (W) · 50% of 46 = 23 (L)

Clue 4 (Order of operations): "PIECES OF A CARBON FIBER MASK WERE FOUND"

$5 \times 10 - 3 = 47$ (P) · $65 + 3 \times 8 = 89$ (K) · $9 \times 12 - 25 = 83$ (I) · $7 \times 8 - 14 = 42$ (O) · $6 \times 11 - 12 = 54$ (W) · $61 + 6 \times 5 = 91$ (N) · $12 + 2 \times 5 = 22$ (S) · $43 + 7 \times 9 = 106$ (U) · $12 \times 10 - 25 = 95$ (D) · $8 \times 6 - 14 = 34$ (R) · $34 + 3 \times 8 = 58$ (A) · $4 + 2 \times 6 = 16$ (F) · $6 \times 12 - 11 = 61$ (E) · $64 + 6 \times 2 = 76$ (M) · $27 + 9 \times 2 = 45$ (B) · $14 + 4 \times 8 = 46$ (C)

Clue 5 (Fractions of a number): surviving statement is box 1 → Gianluigi

$2/6$ of 27 = 9 · $3/6$ of 4 = 2 · $2/4$ of 8 = 4 · $1/6$ of 42 = 7 · $1/5$ of 25 = 5 · $4/6$ of 9 = 6 · $2/4$ of 24 = 12 · $1/10$ of 110 = 11 · $3/8$ of 8 = 3 · $4/6$ of 12 = 8 · $1/8$ of 80 = 10