



The Great Protein Powder Caper

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

Detective: _____ Date: _____

Someone swapped the championship recovery smoothies with salt water right before the final match! Track down the Snack Saboteur before kick-off.

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 Snack Saboteur is _____

Possible suspects

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

NAME	WORKOUT STYLE	NUTRITION SKILL	DOMINANT GRIP	HAIRSTYLE	FOOD ALLERGY
Serena	Jump Squatting	Juice Pressing	Left Handed Grip	Braided Cornrows	Sour Lemonade
Mikaela	Rowing Surge	Protein Blending	Right Handed Grip	High Ponytail	Sour Lemonade
Novak	Sprint Dashing	Carb Loading	Left Handed Grip	Buzz Cut	Spicy Salsa
Megan	Rowing Surge	Macro Counting	Right Handed Grip	Buzz Cut	Spicy Salsa
Chloe	Heavy Lifting	Juice Pressing	Left Handed Grip	Buzz Cut	Spicy Salsa
Cristiano	Heavy Lifting	Protein Blending	Right Handed Grip	High Ponytail	Bitter Espresso
LeBron	Sprint Dashing	Protein Blending	Left Handed Grip	High Ponytail	Bitter Espresso
Tom	Jump Squatting	Macro Counting	Left Handed Grip	Buzz Cut	Bitter Espresso
Sunisa	Jump Squatting	Protein Blending	Left Handed Grip	Buzz Cut	Spicy Salsa
Usain	Rowing Surge	Protein Blending	Right Handed Grip	High Ponytail	Spicy Salsa
Caeleb	Sprint Dashing	Macro Counting	Right Handed Grip	Braided Cornrows	Sour Lemonade
Katie	Jump Squatting	Protein Blending	Right Handed Grip	High Ponytail	Spicy Salsa
Kobe	Power Boxing	Electrolyte Mix	Left Handed Grip	High Ponytail	Spicy Salsa
Luka	Jump Squatting	Protein Blending	Right Handed Grip	Buzz Cut	Sour Lemonade
Shohei	Sprint Dashing	Macro Counting	Right Handed Grip	Buzz Cut	Spicy Salsa
Simone	Heavy Lifting	Electrolyte Mix	Right Handed Grip	Buzz Cut	Spicy Salsa
Sydney	Power Boxing	Macro Counting	Right Handed Grip	Buzz Cut	Bitter Espresso
Venus	Jump Squatting	Macro Counting	Right Handed Grip	Buzz Cut	Spicy Salsa
Shaq	Jump Squatting	Protein Blending	Right Handed Grip	Braided Cornrows	Sour Lemonade
Patrick	Sprint Dashing	Protein Blending	Right Handed Grip	Buzz Cut	Spicy Salsa
Travis	Jump Squatting	Carb Loading	Left Handed Grip	Braided Cornrows	Spicy Salsa

CLUE 1 Integers

The locker room tracker logged temperature changes and score differentials relative to baseline zero.

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

T								T											T
28	26	10	21	3	2	23	28	10	18	15	13	20	13	25	23	28			
								T						T					
18	21	10	10	17	10	22	28	15	23	17	27	28	10	16	20	6			

$$(-12) + 40 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$(-9) + 26 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$(-5) + 28 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$(-6) + 12 = \boxed{} \rightarrow \boxed{\text{X}}$$

$$(-6) + 16 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$(-7) + 25 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$21 - (-1) = \boxed{} \rightarrow \boxed{\text{C}}$$

$$(-13) + 28 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$3 - (-13) = \boxed{} \rightarrow \boxed{\text{M}}$$

$$17 - (-8) = \boxed{} \rightarrow \boxed{\text{N}}$$

$$12 - (-14) = \boxed{} \rightarrow \boxed{\text{H}}$$

$$22 - (-5) = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$2 - (-1) = \boxed{} \rightarrow \boxed{\text{A}}$$

$$(-10) + 23 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$(-7) + 9 = \boxed{} \rightarrow \boxed{\text{B}}$$

$$(-1) + 22 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$14 - (-6) = \boxed{} \rightarrow \boxed{\text{I}}$$

Scratch space:

CLUE 2
Percentages

The gym snack bar register calculated percentage discounts on protein snacks.

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

T										T					
21	11	8	43	48	43	12	8	4	21	48	43	8	6	56	

				T											
33	19	16	11	21	11	56	22	6	8	6	16	33	19	12	52

36	56	33

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

$40\% \text{ of } 140 = \square \rightarrow \text{A}$

$25\% \text{ of } 24 = \square \rightarrow \text{D}$

$10\% \text{ of } 160 = \square \rightarrow \text{G}$

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

$50\% \text{ of } 104 = \square \rightarrow \text{O}$

$25\% \text{ of } 44 = \square \rightarrow \text{H}$

$75\% \text{ of } 44 = \square \rightarrow \text{R}$

$50\% \text{ of } 44 = \square \rightarrow \text{N}$

$50\% \text{ of } 38 = \square \rightarrow \text{I}$

$50\% \text{ of } 72 = \square \rightarrow \text{B}$

$5\% \text{ of } 80 = \square \rightarrow \text{C}$

$5\% \text{ of } 160 = \square \rightarrow \text{E}$

$75\% \text{ of } 64 = \square \rightarrow \text{U}$

$40\% \text{ of } 30 = \square \rightarrow \text{P}$

Scratch space:

CLUE 3

Order of operations

The stadium scoreboard computed fitness scores using a multi-step operation formula.

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

T									T										
85	109	64	20	37	20	86	64	45	85	115	29	64	58	55	115	85	64	102	
20	52	64	29	29	16	100	10	20	86	16	45	27	20	55	29	20	55		

$11 \times 8 - 3 = \square \rightarrow \boxed{\text{T}}$

$65 + 7 \times 5 = \square \rightarrow \boxed{\text{N}}$

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

$10 + 3 \times 2 = \square \rightarrow \boxed{\text{I}}$

$85 + 4 \times 6 = \square \rightarrow \boxed{\text{H}}$

$54 + 2 \times 5 = \square \rightarrow \boxed{\text{E}}$

$6 \times 4 - 14 = \square \rightarrow \boxed{\text{G}}$

$12 \times 11 - 30 = \square \rightarrow \boxed{\text{R}}$

$12 \times 6 - 20 = \square \rightarrow \boxed{\text{M}}$

$8 + 7 \times 3 = \square \rightarrow \boxed{\text{L}}$

$7 \times 9 - 26 = \square \rightarrow \boxed{\text{U}}$

$83 + 4 \times 8 = \square \rightarrow \boxed{\text{F}}$

$34 + 4 \times 6 = \square \rightarrow \boxed{\text{D}}$

$5 + 8 \times 5 = \square \rightarrow \boxed{\text{C}}$

$3 + 4 \times 6 = \square \rightarrow \boxed{\text{Y}}$

$31 + 4 \times 6 = \square \rightarrow \boxed{\text{A}}$

$8 \times 12 - 10 = \square \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 4 Exponents

The digital bench press trainer recorded power output factors written as repeated exponents.

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

S																				
81	125	128	36	49	125	256	243	36	196	36	128	16	256	4	343	9	9			

					S										
8	343	49	27	256	81	128	324	49	125	216	4	216	324	8	125

$9^2 = \square \rightarrow$ S	$5^3 = \square \rightarrow$ H	$6^3 = \square \rightarrow$ E	$16^2 = \square \rightarrow$ A
$7^2 = \square \rightarrow$ T	$7^3 = \square \rightarrow$ U	$14^2 = \square \rightarrow$ F	$2^7 = \square \rightarrow$ O
$3^3 = \square \rightarrow$ W	$3^5 = \square \rightarrow$ I	$3^2 = \square \rightarrow$ Z	$2^2 = \square \rightarrow$ B
$4^2 = \square \rightarrow$ M	$2^3 = \square \rightarrow$ C	$18^2 = \square \rightarrow$ N	$6^2 = \square \rightarrow$ R

Scratch space:

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

The head chef analyzed total recipe calories using fixed base values plus extra scoops.

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:

$6x + 12 = 42, x = \boxed{}$

$5x + 5 = 20, x = \boxed{}$

$3x + 9 = 39, x = \boxed{}$

$5x + 6 = 16, x = \boxed{}$

$5x + 6 = 51, x = \boxed{}$

$3x + 7 = 40, x = \boxed{}$

$2x + 8 = 16, x = \boxed{}$

$3x + 5 = 29, x = \boxed{}$

$3x + 1 = 37, x = \boxed{}$

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

$5x + 6 = 41, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain punched through the training dummy, then mixed a tub of workout drink.
2. The villain rowed five thousand meters, then pressed five gallons of beet juice.
3. The villain sprinted across the gym floor, then blended a triple protein shake.
4. The villain sprinted across the gym floor, then pressed five gallons of beet juice.
5. The villain rowed five thousand meters, then calculated exact macro ratios.
6. The villain leaped onto the highest plyo box, then calculated exact macro ratios.
7. The villain hoisted the heavy barbell, then calculated exact macro ratios.
8. The villain sprinted across the gym floor, then ate a giant bowl of pasta.
9. The villain hoisted the heavy barbell, then blended a triple protein shake.
10. The villain sprinted across the gym floor, then calculated exact macro ratios.
11. The villain leaped onto the highest plyo box, then mixed a tub of workout drink.
12. The villain hoisted the heavy barbell, then pressed five gallons of beet juice.

Answer Key

The Great Protein Powder Caper

Culprit: Venus

Jump Squatting · Macro Counting · Right Handed Grip · Buzz Cut · Spicy Salsa

Trail: Start 21 → Clue 1 19 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Integers): "THE SABOTEUR DID NOT USE ELECTROLYTE MIX"

$(-12) + 40 = 28$ (T) · $(-9) + 26 = 17$ (L) · $(-5) + 28 = 23$ (O) · $(-6) + 12 = 6$ (X) · $(-6) + 16 = 10$ (E) · $(-7) + 25 = 18$ (U) · $21 - (-1) = 22$ (C) · $(-13) + 28 = 15$ (R) · $3 - (-13) = 16$ (M) · $17 - (-8) = 25$ (N) · $12 - (-14) = 26$ (H) · $22 - (-5) = 27$ (Y) · $2 - (-1) = 3$ (A) · $(-10) + 23 = 13$ (D) · $(-7) + 9 = 2$ (B) · $(-1) + 22 = 21$ (S) · $14 - (-6) = 20$ (I)

Clue 2 (Percentages): "THE SUSPECT USED A RIGHT HANDED GRIP ON BAR"

75% of 28 = 21 (T) · 40% of 140 = 56 (A) · 25% of 24 = 6 (D) · 10% of 160 = 16 (G) · 50% of 86 = 43 (S) · 50% of 104 = 52 (O) · 25% of 44 = 11 (H) · 75% of 44 = 33 (R) · 50% of 44 = 22 (N) · 50% of 38 = 19 (I) · 50% of 72 = 36 (B) · 5% of 80 = 4 (C) · 5% of 160 = 8 (E) · 75% of 64 = 48 (U) · 40% of 30 = 12 (P)

Clue 3 (Order of operations): "THE SUSPECT FLED AFTER SMELLING SPICY SALSA"

$11 \times 8 - 3 = 85$ (T) · $65 + 7 \times 5 = 100$ (N) · $5 + 3 \times 5 = 20$ (S) · $10 + 3 \times 2 = 16$ (I) · $85 + 4 \times 6 = 109$ (H) · $54 + 2 \times 5 = 64$ (E) · $6 \times 4 - 14 = 10$ (G) · $12 \times 11 - 30 = 102$ (R) · $12 \times 6 - 20 = 52$ (M) · $8 + 7 \times 3 = 29$ (L) · $7 \times 9 - 26 = 37$ (U) · $83 + 4 \times 8 = 115$ (F) · $34 + 4 \times 6 = 58$ (D) · $5 + 8 \times 5 = 45$ (C) · $3 + 4 \times 6 = 27$ (Y) · $31 + 4 \times 6 = 55$ (A) · $8 \times 12 - 10 = 86$ (P)

Clue 4 (Exponents): "SHORT HAIR FROM A BUZZ CUT WAS ON THE BENCH"

$9^2 = 81$ (S) · $5^3 = 125$ (H) · $6^3 = 216$ (E) · $16^2 = 256$ (A) · $7^2 = 49$ (T) · $7^3 = 343$ (U) · $14^2 = 196$ (F) · $2^7 = 128$ (O) · $3^3 = 27$ (W) · $3^5 = 243$ (I) · $3^2 = 9$ (Z) · $2^2 = 4$ (B) · $4^2 = 16$ (M) · $2^3 = 8$ (C) · $18^2 = 324$ (N) · $6^2 = 36$ (R)

Clue 5 (Two-step equations): surviving statement is box 6 → Venus

$6x + 12 = 42, x = 5$ · $5x + 5 = 20, x = 3$ · $3x + 9 = 39, x = 10$ · $5x + 6 = 16, x = 2$ · $5x + 6 = 51, x = 9$ · $3x + 7 = 40, x = 11$ · $2x + 8 = 16, x = 4$ · $3x + 5 = 29, x = 8$ · $3x + 1 = 37, x = 12$ · $2x + 2 = 4, x = 1$ · $5x + 6 = 41, x = 7$