The Case of the Missing Golden Cup

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

Detective: _____ **Date:** _____

Just hours before the Starlight Cup final, someone broke into the trophy vault and swapped the championship trophy with a deflated practice ball! Track down the clues across the stadium to unmask the culprit.

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 Championship Saboteur is _____

Possible suspects

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

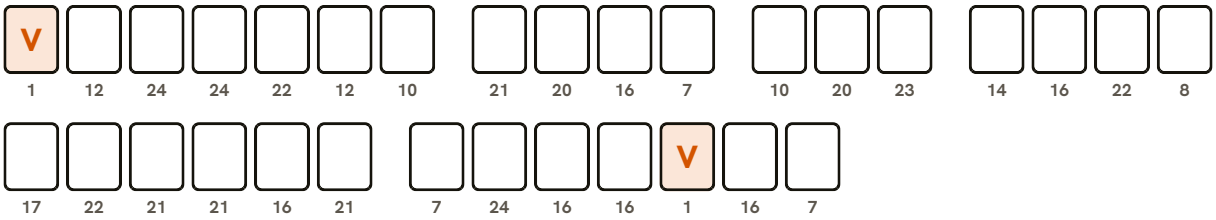
NAME	SIGNATURE MOVE	FAVORITE GEAR	DOMINANT FOOT	HAIRSTYLE	DISTRACTION
Virgil Van Dijk	Power Header	Grip Gloves	Left Footed	Braided Top	Loud Whistle
Declan Rice	Knuckleball	Tinted Visor	Left Footed	Braided Top	Loud Whistle
Erling Haaland	Knuckleball	Tinted Visor	Left Footed	Braided Top	Bright Floodlight
Antoine Griezmann	Knuckleball	Taping Straps	Right Footed	Braided Top	Loud Whistle
Bukayo Saka	Power Header	Neon Headband	Right Footed	Buzz Cut	Bright Floodlight
Kylian Mbappe	Bicycle Shot	Taping Straps	Left Footed	Braided Top	Loud Whistle
Alex Morgan	Bicycle Shot	Tinted Visor	Left Footed	Spiky Cut	Bright Floodlight
Lautaro Martinez	Curve Kick	Padded Sleeves	Left Footed	Braided Top	Loud Whistle
Rodri Hernandez	Rocket Strike	Padded Sleeves	Right Footed	Spiky Cut	Bright Floodlight
Alphonso Davies	Power Header	Tinted Visor	Left Footed	Spiky Cut	Loud Whistle
Sam Kerr	Bicycle Shot	Neon Headband	Right Footed	Buzz Cut	Squeaky Pitch
Cole Palmer	Bicycle Shot	Padded Sleeves	Left Footed	Braided Top	Loud Whistle
Trent Alexander Arnold	Bicycle Shot	Grip Gloves	Right Footed	Braided Top	Loud Whistle
Jamal Musiala	Bicycle Shot	Grip Gloves	Right Footed	Spiky Cut	Squeaky Pitch
Jude Bellingham	Knuckleball	Padded Sleeves	Right Footed	Braided Top	Squeaky Pitch
Khvicha Kvaratskhelia	Knuckleball	Tinted Visor	Left Footed	Buzz Cut	Loud Whistle
Federico Valverde	Knuckleball	Padded Sleeves	Right Footed	Buzz Cut	Loud Whistle
Son Heung Min	Knuckleball	Tinted Visor	Left Footed	Spiky Cut	Squeaky Pitch
Phil Foden	Bicycle Shot	Taping Straps	Left Footed	Buzz Cut	Bright Floodlight
Victor Osimhen	Knuckleball	Taping Straps	Left Footed	Braided Top	Loud Whistle
Kevin De Bruyne	Bicycle Shot	Tinted Visor	Left Footed	Braided Top	Squeaky Pitch

make your own at mathcrackers.com

CLUE 1 Integers

> Analyzing the net gain and loss of turf yards on the practice field reveals an integer pattern leading to our first clue.

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



(-1) + 2 = ☐ → V

(-4) + 24 = ☐ → O

(-2) + 24 = ☐ → A

(-4) + 28 = ☐ → L

(-6) + 18 = ☐ → I

(-3) + 20 = ☐ → P

(-7) + 14 = ☐ → S

(-11) + 21 = ☐ → N

13 - (-8) = ☐ → D

(-10) + 33 = ☐ → T

(-8) + 16 = ☐ → R

(-5) + 19 = ☐ → W

(-13) + 29 = ☐ → E

Scratch space:

CLUE 2 Percentages

Calculating the possession percentages from the stadium tracking system narrows down the suspicious activity.

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

W									W						
19	14	43	17	56	25	25	25	29	19	29	48	56	26	43	

26	4	4	43	56	5	50	48	29	16	56	11	48	56	29	33	56

25	59	56	17	56

10% of 190 = ☐ → W

50% of 22 = ☐ → R

10% of 160 = ☐ → Y

25% of 16 = ☐ → O

50% of 96 = ☐ → L

20% of 295 = ☐ → C

10% of 140 = ☐ → I

40% of 140 = ☐ → E

5% of 580 = ☐ → A

25% of 104 = ☐ → F

50% of 100 = ☐ → P

5% of 500 = ☐ → S

25% of 20 = ☐ → D

75% of 44 = ☐ → V

5% of 860 = ☐ → T

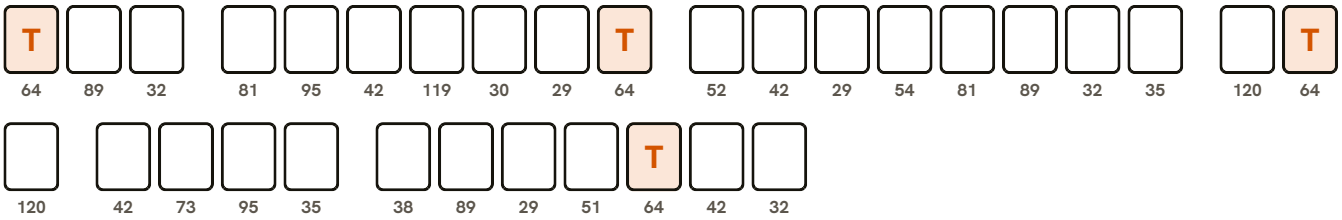
5% of 340 = ☐ → N

Scratch space:

CLUE 3 Order of operations

> Evaluating the complex tournament scoring equation using proper order of operations unlocks the encrypted locker camera footage.

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



52 + 4 × 3 = ☐ → T

10 × 6 - 30 = ☐ → R

10 × 7 - 19 = ☐ → S

12 × 12 - 25 = ☐ → P

9 × 11 - 10 = ☐ → H

14 + 2 × 9 = ☐ → E

9 × 5 - 3 = ☐ → L

5 × 6 - 1 = ☐ → I

24 + 7 × 2 = ☐ → W

6 × 11 - 14 = ☐ → F

52 + 7 × 3 = ☐ → O

7 × 8 - 2 = ☐ → N

92 + 7 × 4 = ☐ → A

7 × 12 - 3 = ☐ → C

10 × 11 - 15 = ☐ → U

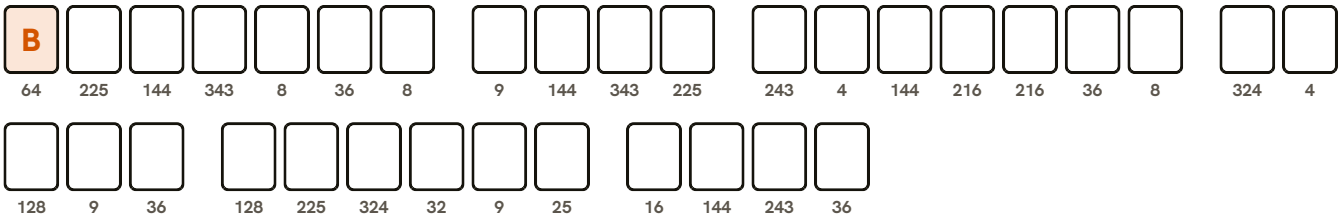
8 + 3 × 9 = ☐ → D

Scratch space:

CLUE 4 Exponents

> Computing the exponential increase in spectator ticket sales pinpointed the precise moment the security system was bypassed.

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



2^6 = ☐ → B	2^2 = ☐ → N	7^3 = ☐ → I	2^7 = ☐ → T
15^2 = ☐ → R	2^4 = ☐ → C	3^2 = ☐ → H	2^3 = ☐ → D
6^3 = ☐ → G	12^2 = ☐ → A	6^2 = ☐ → E	2^5 = ☐ → P
18^2 = ☐ → O	5^2 = ☐ → Y	3^5 = ☐ → S	

Scratch space:

CLUE 5 Two-step equations - the last clue

Solving a two step algebra equation based on drill times reveals the final hidden 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:

6x + 8 = 38, x = ☐	3x + 4 = 34, x = ☐	3x + 1 = 37, x = ☐	6x + 8 = 26, x = ☐
4x + 5 = 41, x = ☐	2x + 10 = 24, x = ☐	2x + 11 = 23, x = ☐	3x + 5 = 29, x = ☐
4x + 11 = 19, x = ☐	2x + 3 = 25, x = ☐	4x + 11 = 15, x = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain swerved a knuckleball through the laser grid, then adjusted a neon headband during the escape.
2. The villain leapt high for a power header to smash the latch, then wrapped taping straps before running away.
3. The villain executed a bicycle shot to reach the shelf, then tightened grip gloves while grabbing the prize.
4. The villain swerved a knuckleball through the laser grid, then wrapped taping straps before running away.
5. The villain swerved a knuckleball through the laser grid, then adjusted a tinted visor in the dark tunnel.
6. The villain executed a bicycle shot to reach the shelf, then adjusted a neon headband during the escape.
7. The villain fired a rocket strike at the lock, then adjusted a neon headband during the escape.
8. The villain leapt high for a power header to smash the latch, then pulled up padded sleeves in the hallway.
9. The villain executed a bicycle shot to reach the shelf, then pulled up padded sleeves in the hallway.
10. The villain leapt high for a power header to smash the latch, then tightened grip gloves while grabbing the prize.
11. The villain fired a rocket strike at the lock, then adjusted a tinted visor in the dark tunnel.
12. The villain executed a bicycle shot to reach the shelf, then wrapped taping straps before running away.

TEACHER / PARENT

Answer Key

The Case of the Missing Golden Cup

Culprit: Victor Osimhen

Knuckleball · Taping Straps · Left Footed · Braided Top · Loud Whistle

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Integers): "VILLAIN DOES NOT WEAR PADDED SLEEVES"

(-1) + 2 = 1 (V) · (-4) + 24 = 20 (O) · (-2) + 24 = 22 (A) · (-4) + 28 = 24 (L) · (-6) + 18 = 12 (I) · (-3) + 20 = 17 (P) · (-7) + 14 = 7 (S) · (-11) + 21 = 10 (N) · 13 - (-8) = 21 (D) · (-10) + 33 = 23 (T) · (-8) + 16 = 8 (R) · (-5) + 19 = 14 (W) · (-13) + 29 = 16 (E)

Clue 2 (Percentages): "WITNESS SAW A LEFT FOOTED PLAYER LEAVE SCENE"

10% of 190 = 19 (W) · 50% of 22 = 11 (R) · 10% of 160 = 16 (Y) · 25% of 16 = 4 (O) · 50% of 96 = 48 (L) · 20% of 295 = 59 (C) · 10% of 140 = 14 (I) · 40% of 140 = 56 (E) · 5% of 580 = 29 (A) · 25% of 104 = 26 (F) · 50% of 100 = 50 (P) · 5% of 500 = 25 (S) · 25% of 20 = 5 (D) · 75% of 44 = 33 (V) · 5% of 860 = 43 (T) · 5% of 340 = 17 (N)

Clue 3 (Order of operations): "THE CULPRIT FLINCHED AT A LOUD WHISTLE"

52 + 4 × 3 = 64 (T) · 10 × 6 - 30 = 30 (R) · 10 × 7 - 19 = 51 (S) · 12 × 12 - 25 = 119 (P) · 9 × 11 - 10 = 89 (H) · 14 + 2 × 9 = 32 (E) · 9 × 5 - 3 = 42 (L) · 5 × 6 - 1 = 29 (I) · 24 + 7 × 2 = 38 (W) · 6 × 11 - 14 = 52 (F) · 52 + 7 × 3 = 73 (O) · 7 × 8 - 2 = 54 (N) · 92 + 7 × 4 = 120 (A) · 7 × 12 - 3 = 81 (C) · 10 × 11 - 15 = 95 (U) · 8 + 3 × 9 = 35 (D)

Clue 4 (Exponents): "BRAIDED HAIR SNAGGED ON THE TROPHY CASE"

2^6 = 64 (B) · 2^2 = 4 (N) · 7^3 = 343 (I) · 2^7 = 128 (T) · 15^2 = 225 (R) · 2^4 = 16 (C) · 3^2 = 9 (H) · 2^3 = 8 (D) · 6^3 = 216 (G) · 12^2 = 144 (A) · 6^2 = 36 (E) · 2^5 = 32 (P) · 18^2 = 324 (O) · 5^2 = 25 (Y) · 3^5 = 243 (S)

Clue 5 (Two-step equations): surviving statement is box 4 → Victor Osimhen

6x + 8 = 38, x = 5 · 3x + 4 = 34, x = 10 · 3x + 1 = 37, x = 12 · 6x + 8 = 26, x = 3 · 4x + 5 = 41, x = 9 · 2x + 10 = 24, x = 7 · 2x + 11 = 23, x = 6 · 3x + 5 = 29, x = 8 · 4x + 11 = 19, x = 2 · 2x + 3 = 25, x = 11 · 4x + 11 = 15, x = 1