The World Cup Trophy Caper

Grade 10 math · Pythagorean theorem, Square roots, Exponents, Order of operations · Reading level grades 7-9

Detective: _____ **Date:** _____

The stadium lights are blazing and millions of fans are cheering in the stands, but behind the scenes, disaster has struck! Just minutes before kickoff, the legendary World Cup Trophy was snatched from its high-security display vault. The Head Referee found only a grass-stained soccer sock left in its place. As the lead youth detective, you must analyze the clues, track down the rogue player, and recover the trophy before the final whistle blows!

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 midfielder 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	CLEAT BRAND	DOMINANT FOOT	HAIRSTYLE	DEFENSIVE COUNTER
Erling	Diving Header	Bolt Stripes	Right Footed	Frosted Tips	Double Team
Kylian	Knuckleball Free Kick	Crown Leather	Left Footed	Frosted Tips	Offside Trap
Mohamed	Knuckleball Free Kick	Acro Brand	Left Footed	Shaved Head	Slide Tackle
Neymar	Rainbow Flick	Crown Leather	Left Footed	Shaved Head	Slide Tackle
Eden	Bicycle Kick	Dynasty Knit	Right Footed	Spiky Mohawk	Double Team
Son	Diving Header	Dynasty Knit	Right Footed	Frosted Tips	Double Team
Bruno	Rabona Pass	Bolt Stripes	Right Footed	Frosted Tips	Slide Tackle
Casemiro	Diving Header	Crown Leather	Right Footed	Spiky Mohawk	Double Team
Marcus	Rainbow Flick	Bolt Stripes	Left Footed	Spiky Mohawk	Slide Tackle
Harry	Bicycle Kick	Acro Brand	Right Footed	Frosted Tips	Double Team
Virgil	Bicycle Kick	Dynasty Knit	Left Footed	Frosted Tips	Offside Trap
Alisson	Diving Header	Crown Leather	Right Footed	Frosted Tips	Double Team
Lionel	Bicycle Kick	Bolt Stripes	Left Footed	Spiky Mohawk	Double Team
Kevin	Rainbow Flick	Bolt Stripes	Left Footed	Frosted Tips	Double Team
Luis	Knuckleball Free Kick	Bolt Stripes	Right Footed	Shaved Head	Offside Trap
Luka	Bicycle Kick	Eclipse Sole	Left Footed	Spiky Mohawk	Offside Trap
Antoine	Rabona Pass	Acro Brand	Right Footed	Shaved Head	Double Team
Karim	Rainbow Flick	Bolt Stripes	Left Footed	Spiky Mohawk	Double Team
Pedri	Diving Header	Eclipse Sole	Right Footed	Spiky Mohawk	Offside Trap
Thomas	Rabona Pass	Eclipse Sole	Right Footed	Frosted Tips	Offside Trap
Lautaro	Knuckleball Free Kick	Bolt Stripes	Right Footed	Frosted Tips	Double Team

CLUE 1 Pythagorean theorem

> Security cameras captured the suspect escaping diagonally across the field. To find the exact distance of their escape path, the security team uses the pitch lines to calculate the hypotenuse.

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

T																		T	
13	30	5	116	74	58	58	50	74	87	51	125	5	68	87	125	13			
							T						T						
82	5	50	65	51	100	87	50	68	13	100	15	87	74	13					

legs 5 and 12, hypotenuse = ☐ → T

legs 60 and 63, hypotenuse = ☐ → N

legs 80 and 84, hypotenuse = ☐ → V

legs 28 and 96, hypotenuse = ☐ → Y

legs 14 and 48, hypotenuse = ☐ → A

legs 35 and 120, hypotenuse = ☐ → O

legs 3 and 4, hypotenuse = ☐ → E

legs 18 and 80, hypotenuse = ☐ → W

legs 18 and 24, hypotenuse = ☐ → H

legs 40 and 42, hypotenuse = ☐ → L

legs 9 and 12, hypotenuse = ☐ → K

legs 24 and 70, hypotenuse = ☐ → I

legs 32 and 60, hypotenuse = ☐ → S

legs 25 and 60, hypotenuse = ☐ → R

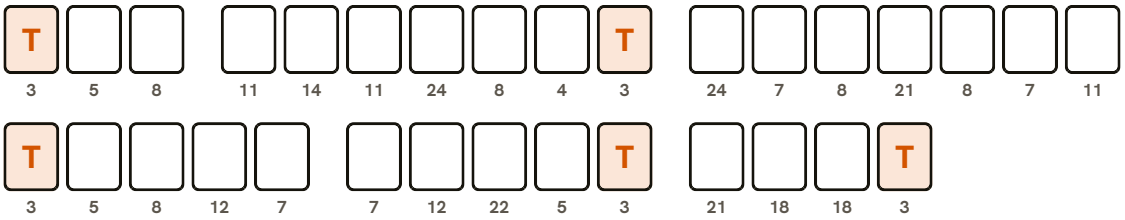
legs 24 and 45, hypotenuse = ☐ → D

Scratch space:

CLUE 2 Square roots

> The suspect left a square pattern of muddy footprints on the penalty spot. Our forensic team measures the area of the mud patch to find the length of one side of the square.

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



sqrt(9) = ☐ → **T**

sqrt(121) = ☐ → **S**

sqrt(196) = ☐ → **U**

sqrt(144) = ☐ → **I**

sqrt(441) = ☐ → **F**

sqrt(49) = ☐ → **R**

sqrt(25) = ☐ → **H**

sqrt(484) = ☐ → **G**

sqrt(64) = ☐ → **E**

sqrt(324) = ☐ → **O**

sqrt(16) = ☐ → **C**

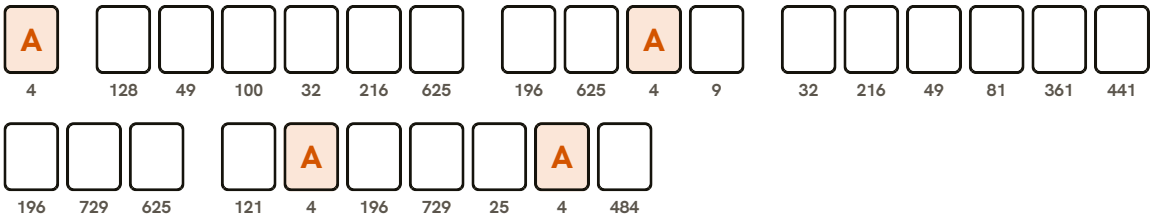
sqrt(576) = ☐ → **P**

Scratch space:

CLUE 3 Exponents

> Inside the team locker room, you find a digital safe locked with an access code that multiplies exponentially with every incorrect attempt. Solve the power pattern to crack it.

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



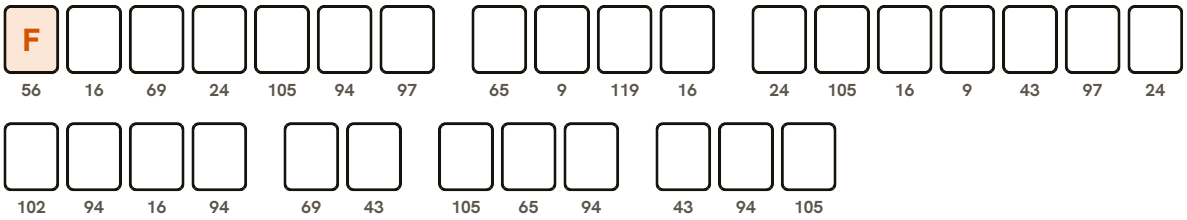
2^2 = ☐ → A	3^2 = ☐ → M	7^2 = ☐ → O	22^2 = ☐ → Y
3^4 = ☐ → C	3^6 = ☐ → H	19^2 = ☐ → K	6^3 = ☐ → L
11^2 = ☐ → P	10^2 = ☐ → U	2^5 = ☐ → B	5^4 = ☐ → E
14^2 = ☐ → T	2^7 = ☐ → D	21^2 = ☐ → S	5^2 = ☐ → W

Scratch space:

CLUE 4 Order of operations

> The stadium scoreboard has been hacked to display a scrambled set of operations. Following the correct order of math rules will reveal the jersey number of our prime witness.

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



11 × 6 - 10 = ☐ → F	7 × 4 - 12 = ☐ → R	41 + 8 × 8 = ☐ → T
55 + 7 × 2 = ☐ → O	15 + 3 × 3 = ☐ → S	12 × 8 - 2 = ☐ → E
49 + 4 × 4 = ☐ → H	7 × 9 - 20 = ☐ → N	3 + 3 × 2 = ☐ → A
9 × 12 - 6 = ☐ → W	56 + 9 × 7 = ☐ → I	9 × 12 - 11 = ☐ → D

Scratch space:

CLUE 5 Square roots - the last clue

> The stadium's motion detectors cover a perfectly square security zone around the VIP entrance. Finding the square root of this guarded area helps us pinpoint where the suspect disabled the alarm.

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:

sqrt(16) = ☐ sqrt(9) = ☐ sqrt(144) = ☐ sqrt(121) = ☐ sqrt(36) = ☐

sqrt(4) = ☐ sqrt(25) = ☐ sqrt(64) = ☐ sqrt(1) = ☐ sqrt(49) = ☐

sqrt(100) = ☐

Step 2 - cross out the sentence with each answer:

1. The villain scores with a diving header, then escapes in dynasty knit footwear.
2. The villain scores with a diving header, then runs off in acro brand cleats.
3. The villain scores with a diving header, then speeds off wearing crown leather boots.
4. The villain scores with a diving header, then dashes away in bolt stripes shoes.
5. The villain crosses with a rabona pass, then flees the pitch in eclipse sole cleats.
6. The villain performs a flawless bicycle kick, then escapes in dynasty knit footwear.
7. The villain performs a flawless bicycle kick, then dashes away in bolt stripes shoes.
8. The villain strikes a knuckleball free kick, then flees the pitch in eclipse sole cleats.
9. The villain strikes a knuckleball free kick, then dashes away in bolt stripes shoes.
10. The villain crosses with a rabona pass, then runs off in acro brand cleats.
11. The villain strikes a knuckleball free kick, then speeds off wearing crown leather boots.
12. The villain performs a flawless bicycle kick, then runs off in acro brand cleats.

TEACHER / PARENT

Answer Key

The World Cup Trophy Caper

Culprit: Lautaro

Knuckleball Free Kick · Bolt Stripes · Right Footed · Frosted Tips · Double Team

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Pythagorean theorem): "THE VILLAIN DOES NOT WEAR DYNASTY KNIT"

legs 5 and 12, hypotenuse = 13 (T) · legs 60 and 63, hypotenuse = 87 (N) · legs 80 and 84, hypotenuse = 116 (V) · legs 28 and 96, hypotenuse = 100 (Y) · legs 14 and 48, hypotenuse = 50 (A) · legs 35 and 120, hypotenuse = 125 (O) · legs 3 and 4, hypotenuse = 5 (E) · legs 18 and 80, hypotenuse = 82 (W) · legs 18 and 24, hypotenuse = 30 (H) · legs 40 and 42, hypotenuse = 58 (L) · legs 9 and 12, hypotenuse = 15 (K) · legs 24 and 70, hypotenuse = 74 (I) · legs 32 and 60, hypotenuse = 68 (S) · legs 25 and 60, hypotenuse = 65 (R) · legs 24 and 45, hypotenuse = 51 (D)

Clue 2 (Square roots): "THE SUSPECT PREFERS THEIR RIGHT FOOT"

sqrt(9) = 3 (T) · sqrt(121) = 11 (S) · sqrt(196) = 14 (U) · sqrt(144) = 12 (I) · sqrt(441) = 21 (F) · sqrt(49) = 7 (R) · sqrt(25) = 5 (H) · sqrt(484) = 22 (G) · sqrt(64) = 8 (E) · sqrt(324) = 18 (O) · sqrt(16) = 4 (C) · sqrt(576) = 24 (P)

Clue 3 (Exponents): "A DOUBLE TEAM BLOCKS THE PATHWAY"

2^2 = 4 (A) · 3^2 = 9 (M) · 7^2 = 49 (O) · 22^2 = 484 (Y) · 3^4 = 81 (C) · 3^6 = 729 (H) · 19^2 = 361 (K) · 6^3 = 216 (L) · 11^2 = 121 (P) · 10^2 = 100 (U) · 2^5 = 32 (B) · 5^4 = 625 (E) · 14^2 = 196 (T) · 2^7 = 128 (D) · 21^2 = 441 (S) · 5^2 = 25 (W)

Clue 4 (Order of operations): "FROSTED HAIR STRANDS WERE ON THE NET"

11 × 6 - 10 = 56 (F) · 7 × 4 - 12 = 16 (R) · 41 + 8 × 8 = 105 (T) · 55 + 7 × 2 = 69 (O) · 15 + 3 × 3 = 24 (S) · 12 × 8 - 2 = 94 (E) · 49 + 4 × 4 = 65 (H) · 7 × 9 - 20 = 43 (N) · 3 + 3 × 2 = 9 (A) · 9 × 12 - 6 = 102 (W) · 56 + 9 × 7 = 119 (I) · 9 × 12 - 11 = 97 (D)

Clue 5 (Square roots): surviving statement is box 9 → Lautaro

sqrt(16) = 4 · sqrt(9) = 3 · sqrt(144) = 12 · sqrt(121) = 11 · sqrt(36) = 6 · sqrt(4) = 2 · sqrt(25) = 5 · sqrt(64) = 8 · sqrt(1) = 1 · sqrt(49) = 7 · sqrt(100) = 10