



The Case of the Golden Cleat

Grade 7 math · Place value, Integers, Percentages, Order of operations, Two-step equations · Reading level grades 3-4

Detective: _____ Date: _____

Just minutes before the big final, the legendary Golden Cleat went missing from the trophy room! The star striker needs it to play. There are twenty-four soccer players in the building. Can you help our junior detective track down the thief before the 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 cleat thief 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	SPECIAL TRICK	DOMINANT FOOT	STYLE	WEAKNESS
Megan Rapinoe	Lightning Sprint	Laser Pass	Right-footed kick	Sleek Ponytail	Tires in second half
Cristiano Ronaldo	Lightning Sprint	Giant Header	Left-footed kick	Neon Green Headband	Afraid of muddy fields
David Beckham	Lightning Sprint	Laser Pass	Left-footed kick	Spiky Red Hair	Tires in second half
Bukayo Saka	Mega Volley Kick	Bicycle Kick	Right-footed kick	Sleek Ponytail	Tires in second half
Wendie Renard	Super Goalie Save	Laser Pass	Left-footed kick	Sleek Ponytail	Distracted by mascot
Neymar Jr	Super Goalie Save	Giant Header	Right-footed kick	Neon Green Headband	Distracted by mascot
Pele	Super Goalie Save	Giant Header	Left-footed kick	Neon Green Headband	Distracted by mascot
Sam Kerr	Lightning Sprint	Giant Header	Right-footed kick	Neon Green Headband	Afraid of muddy fields
Zinedine Zidane	Mega Volley Kick	Slide Tackle	Right-footed kick	Sleek Ponytail	Afraid of muddy fields
Mia Hamm	Lightning Sprint	Diving Header	Right-footed kick	Neon Green Headband	Afraid of muddy fields
Lionel Messi	Super Goalie Save	Giant Header	Left-footed kick	Spiky Red Hair	Tires in second half
Son Heung-min	Turbo Dribble	Diving Header	Left-footed kick	Neon Green Headband	Tires in second half
Clara Cleats	Curving Corner Kick	Giant Header	Left-footed kick	Neon Green Headband	Tires in second half
Gaby Goalie	Mega Volley Kick	Bicycle Kick	Left-footed kick	Sleek Ponytail	Afraid of muddy fields
Mo Salah	Turbo Dribble	Slide Tackle	Right-footed kick	Spiky Red Hair	Tires in second half
Sally Striker	Curving Corner Kick	Laser Pass	Right-footed kick	Neon Green Headband	Afraid of muddy fields
Kylian Mbappe	Lightning Sprint	Diving Header	Left-footed kick	Neon Green Headband	Afraid of muddy fields
Danny Dribble	Super Goalie Save	Giant Header	Right-footed kick	Sleek Ponytail	Afraid of muddy fields
Erling Haaland	Lightning Sprint	Laser Pass	Right-footed kick	Neon Green Headband	Afraid of muddy fields
Marta	Turbo Dribble	Bicycle Kick	Right-footed kick	Neon Green Headband	Afraid of muddy fields
Alex Morgan	Turbo Dribble	Diving Header	Right-footed kick	Sleek Ponytail	Distracted by mascot

CLUE 1 Place value

We checked the digital lock on the locker room door. The lock screen shows a number, but some digits are faded. Let us find the value of the hundreds place to unlock the first clue!

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

90 40 20 700 8000 5000 5000 500 8000 10 7000 6000 20 30 10 6000 90

2000 30 20 90 40 20 7000 8000 700 8000 10 4000 40 20 500 7000 20 200

 $\rightarrow$ **T**

A diagram showing a transformation. On the left is a simple rectangular box. An arrow points from this box to another rectangular box on the right. Inside the second box is the letter 'U'.

?  → 

2? → **V**

? → **E**

7? → **R**

? → **H**

0? $\rightarrow$ **G**

A diagram showing a transformation. On the left is a simple rectangular box. An arrow points from this box to another rectangular box on the right. Inside the second box is the letter 'L'.

? → ☒

A diagram showing a transition from an empty box to a box containing the letter 'I'. The first box is empty, and an arrow points to the second box, which contains the letter 'I'.

? → **D**

? → **N**

? → **A**

Scratch space:

CLUE 2 Integers

The referee kept track of the team yardage and goal difference during practice. Some drills lost points and some won points. Help us find the final integer score to discover a new clue!

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

T																			
27	1	20	11	18	10	3	3	21	10	3	27	24	18	8	5	2	10		
				T				T											
18	28	11	1	27	13	24	24	27	29	28	9	29							

$$26 - (-1) = \boxed{} \rightarrow \boxed{\text{T}}$$

$$(-11) + 16 = \boxed{} \rightarrow \boxed{\text{B}}$$

$$(-14) + 16 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$(-1) + 4 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$(-14) + 25 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$(-9) + 10 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$(-9) + 18 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$(-14) + 35 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$(-6) + 19 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$(-1) + 11 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$(-8) + 28 = \boxed{} \rightarrow \boxed{\text{E}}$$

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

$$(-4) + 32 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$(-4) + 22 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$21 - (-8) = \boxed{} \rightarrow \boxed{\text{K}}$$

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

Scratch space:

CLUE 3

Percentages

The stadium big screen shows the possession stats for both teams. One team had a huge chunk of the ball control. Find the exact percentage of playtime to reveal a clue!

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

T																	
37	60	51	4	13	10	10	20	13	2	40	20	2	20	12	20	5	
				T												T	
54	40	29	26	37	60	51	26	30	38	38	5	25	55	29	37		

$50\% \text{ of } 74 = \square \rightarrow \text{ T }$

$25\% \text{ of } 8 = \square \rightarrow \text{ N }$

$20\% \text{ of } 65 = \square \rightarrow \text{ I }$

$20\% \text{ of } 100 = \square \rightarrow \text{ A }$

$60\% \text{ of } 20 = \square \rightarrow \text{ W }$

$5\% \text{ of } 500 = \square \rightarrow \text{ S }$

$75\% \text{ of } 68 = \square \rightarrow \text{ E }$

$10\% \text{ of } 290 = \square \rightarrow \text{ O }$

$50\% \text{ of } 76 = \square \rightarrow \text{ D }$

$50\% \text{ of } 20 = \square \rightarrow \text{ L }$

$50\% \text{ of } 52 = \square \rightarrow \text{ M }$

$20\% \text{ of } 20 = \square \rightarrow \text{ V }$

$25\% \text{ of } 160 = \square \rightarrow \text{ R }$

$60\% \text{ of } 90 = \square \rightarrow \text{ F }$

$20\% \text{ of } 275 = \square \rightarrow \text{ P }$

$40\% \text{ of } 150 = \square \rightarrow \text{ H }$

$10\% \text{ of } 50 = \square \rightarrow \text{ Y }$

$10\% \text{ of } 300 = \square \rightarrow \text{ U }$

Scratch space:

CLUE 4

Order of operations

Coach Marcus uses a tricky points formula for the daily training drills. We need to solve his math puzzle using the correct order of steps to unlock this clue!

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

A													A				A	
56	46	118	111	46	55	10	118	118	46	39	35	10	56	43	59	56	39	
47	118	17	35	111	46	35	18	118	35	81	10	17						

$10 \times 8 - 24 = \square \rightarrow \text{A}$

$11 + 3 \times 2 = \square \rightarrow \text{F}$

$12 + 2 \times 3 = \square \rightarrow \text{H}$

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

$10 \times 6 - 17 = \square \rightarrow \text{P}$

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

$10 \times 12 - 2 = \square \rightarrow \text{E}$

$8 \times 11 - 7 = \square \rightarrow \text{U}$

$11 \times 11 - 10 = \square \rightarrow \text{O}$

$30 + 8 \times 2 = \square \rightarrow \text{N}$

$7 + 4 \times 8 = \square \rightarrow \text{S}$

$12 \times 5 - 5 = \square \rightarrow \text{G}$

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

$5 \times 12 - 1 = \square \rightarrow \text{W}$

Scratch space:

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

We found a note about the supply bags. Each bag has the same number of cones, plus four extra on the grass. Solve the two-step equation to find the number of cones and get our final 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:

$3x + 12 = 36, x = \boxed{}$

$5x + 2 = 57, x = \boxed{}$

$2x + 3 = 21, x = \boxed{}$

$5x + 3 = 13, x = \boxed{}$

$3x + 3 = 15, x = \boxed{}$

$5x + 3 = 63, x = \boxed{}$

$6x + 4 = 64, x = \boxed{}$

$3x + 12 = 21, x = \boxed{}$

$3x + 10 = 13, x = \boxed{}$

$5x + 9 = 44, x = \boxed{}$

$2x + 3 = 15, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain scored directly from a curving corner kick, then cleared the ball with a giant header.
2. The villain dribbled past everyone at turbo speed, then clinched the win with a diving header.
3. The villain scored directly from a curving corner kick, then clinched the win with a diving header.
4. The villain zipped down the sideline with a lightning sprint, then clinched the win with a diving header.
5. The villain zipped down the sideline with a lightning sprint, then sent a perfect laser pass to the striker.
6. The villain dribbled past everyone at turbo speed, then sent a perfect laser pass to the striker.
7. The villain zipped down the sideline with a lightning sprint, then stopped the counterattack with a slide tackle.
8. The villain zipped down the sideline with a lightning sprint, then cleared the ball with a giant header.
9. The villain scored directly from a curving corner kick, then sent a perfect laser pass to the striker.
10. The villain made an impossible super goalie save, then sent a perfect laser pass to the striker.
11. The villain dribbled past everyone at turbo speed, then scored a spectacular bicycle kick.
12. The villain dribbled past everyone at turbo speed, then cleared the ball with a giant header.

Answer Key

The Case of the Golden Cleat

Culprit: Erling Haaland

Lightning Sprint · Laser Pass · Right-footed kick · Neon Green Headband · Afraid of muddy fields

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE THE DIVING HEADER"

What is the value of the 9 in 48,593? = 90 (T) · What is the value of the 2 in 42,566? = 2000 (U) · What is the value of the 3 in 920,834? = 30 (S) · What is the value of the 7 in 882,722? = 700 (V) · What is the value of the 2 in 503,828? = 20 (E) · What is the value of the 2 in 171,277? = 200 (R) · What is the value of the 4 in 609,942? = 40 (H) · What is the value of the 4 in 314,190? = 4000 (G) · What is the value of the 5 in 75,979? = 5000 (L) · What is the value of the 6 in 476,735? = 6000 (O) · What is the value of the 8 in 18,669? = 8000 (I) · What is the value of the 7 in 387,635? = 7000 (D) · What is the value of the 1 in 435,414? = 10 (N) · What is the value of the 5 in 84,571? = 500 (A)

Clue 2 (Integers): "THE GRASS WAS TORN BY A RIGHT FOOT KICK"

$26 - (-1) = 27$ (T) · $(-11) + 16 = 5$ (B) · $(-14) + 16 = 2$ (Y) · $(-1) + 4 = 3$ (S) · $(-14) + 25 = 11$ (G) · $(-9) + 10 = 1$ (H) · $(-9) + 18 = 9$ (C) · $(-14) + 35 = 21$ (W) · $(-6) + 19 = 13$ (F) · $(-1) + 11 = 10$ (A) · $(-8) + 28 = 20$ (E) · $(-3) + 11 = 8$ (N) · $(-4) + 32 = 28$ (I) · $(-4) + 22 = 18$ (R) · $21 - (-8) = 29$ (K) · $12 - (-12) = 24$ (O)

Clue 3 (Percentages): "THE VILLAIN RAN AWAY FROM THE MUDDY SPOT"

50% of 74 = 37 (T) · 25% of 8 = 2 (N) · 20% of 65 = 13 (I) · 20% of 100 = 20 (A) · 60% of 20 = 12 (W) · 5% of 500 = 25 (S) · 75% of 68 = 51 (E) · 10% of 290 = 29 (O) · 50% of 76 = 38 (D) · 50% of 20 = 10 (L) · 50% of 52 = 26 (M) · 20% of 20 = 4 (V) · 25% of 160 = 40 (R) · 60% of 90 = 54 (F) · 20% of 275 = 55 (P) · 40% of 150 = 60 (H) · 10% of 50 = 5 (Y) · 10% of 300 = 30 (U)

Clue 4 (Order of operations): "A NEON GREEN STRAP WAS LEFT ON THE TURF"

$10 \times 8 - 24 = 56$ (A) · $11 + 3 \times 2 = 17$ (F) · $12 + 2 \times 3 = 18$ (H) · $5 \times 10 - 3 = 47$ (L) · $10 \times 6 - 17 = 43$ (P) · $5 + 6 \times 5 = 35$ (T) · $10 \times 12 - 2 = 118$ (E) · $8 \times 11 - 7 = 81$ (U) · $11 \times 11 - 10 = 111$ (O) · $30 + 8 \times 2 = 46$ (N) · $7 + 4 \times 8 = 39$ (S) · $12 \times 5 - 5 = 55$ (G) · $3 \times 5 - 5 = 10$ (R) · $5 \times 12 - 1 = 59$ (W)

Clue 5 (Two-step equations): surviving statement is box 5 → Erling Haaland

$3x + 12 = 36, x = 8$ · $5x + 2 = 57, x = 11$ · $2x + 3 = 21, x = 9$ · $5x + 3 = 13, x = 2$ · $3x + 3 = 15, x = 4$ · $5x + 3 = 63, x = 12$ · $6x + 4 = 64, x = 10$ · $3x + 12 = 21, x = 3$ · $3x + 10 = 13, x = 1$ · $5x + 9 = 44, x = 7$ · $2x + 3 = 15, x = 6$