



The Hardwood Arena Mystery

Grade 5 math · Multiplication, Rounding, Place value, Bar models, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

Just before the championship tip-off, someone tampered with the arena gear! Championship basketballs were swapped, shot clocks were scrambled, and vital gear was hidden around the gym. Work with the detective squad to decode the clues, track down the culprit, and save the big game.

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 Court Saboteur is _____

Possible suspects

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

NAME	PRIMARY GEAR	SECONDARY TOOL	SHOOTING STYLE	HAIRSTYLE	GAME FLAW
Giannis	Leather Basketball	Ankle Brace	Right Handed Shooter	Curly Afro Hair	Slick Floor Polish
Elena	Whistle	Tactical Clipboard	Left Handed Shooter	Curly Afro Hair	Deflated Air Pressure
Kobe	Breakaway Rim	Ball Pump	Right Handed Shooter	Curly Afro Hair	Deflated Air Pressure
Sabrina	Leather Basketball	Ball Pump	Left Handed Shooter	Buzz Cut Hair	Deflated Air Pressure
Aja	High-Top Sneaker	Tactical Clipboard	Left Handed Shooter	Buzz Cut Hair	Deflated Air Pressure
Devin	Leather Basketball	Tactical Clipboard	Left Handed Shooter	Braided Hair	Loud Buzzer Sound
Maya	Leather Basketball	Shot Clock	Right Handed Shooter	Buzz Cut Hair	Deflated Air Pressure
Shaq	Leather Basketball	Ball Pump	Left Handed Shooter	Curly Afro Hair	Deflated Air Pressure
Jimmy	Whistle	Ball Pump	Left Handed Shooter	Curly Afro Hair	Slick Floor Polish
Luka	Leather Basketball	Shot Clock	Left Handed Shooter	Braided Hair	Deflated Air Pressure
Paige	High-Top Sneaker	Ankle Brace	Left Handed Shooter	Buzz Cut Hair	Slick Floor Polish
Kawhi	Leather Basketball	Ball Pump	Right Handed Shooter	Buzz Cut Hair	Loud Buzzer Sound
Joel	Leather Basketball	Ankle Brace	Left Handed Shooter	Braided Hair	Deflated Air Pressure
Candace	Whistle	Shot Clock	Left Handed Shooter	Buzz Cut Hair	Deflated Air Pressure
Breanna	Grip Powder	Mesh Net	Left Handed Shooter	Braided Hair	Deflated Air Pressure
Kelsey	Whistle	Shot Clock	Right Handed Shooter	Braided Hair	Deflated Air Pressure
Steph	Leather Basketball	Shot Clock	Left Handed Shooter	Buzz Cut Hair	Deflated Air Pressure
Sue	Grip Powder	Ball Pump	Left Handed Shooter	Braided Hair	Slick Floor Polish
Victor	Breakaway Rim	Mesh Net	Left Handed Shooter	Braided Hair	Slick Floor Polish
Angel	High-Top Sneaker	Tactical Clipboard	Right Handed Shooter	Buzz Cut Hair	Slick Floor Polish
Diana	Breakaway Rim	Tactical Clipboard	Left Handed Shooter	Buzz Cut Hair	Deflated Air Pressure

CLUE 1 Multiplication facts (1-12)

You examine full racks of match balls, multiplying identical rows to check inventory and reveal a code.

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

Diagram showing 18 boxes arranged in two rows. The top row has 18 boxes, and the bottom row has 12 boxes. The boxes are numbered 1 to 18. Boxes 1, 9, and 18 are highlighted in orange and contain the letter 'T'. The numbers below the boxes are:

Row 1: 144, 84, 6, 36, 132, 36, 55, 6, 7, 144, 4, 63, 6, 36, 90, 63, 144

Row 2: 132, 36, 6, 64, 28, 64, 44, 44, 55, 132, 42, 55

$12 \times 12 = \square \rightarrow \boxed{\text{T}}$

$6 \times 7 = \square \rightarrow \mathbf{M}$

$4 \times 7 = \square \rightarrow \mathbf{B}$

$1 \times 7 = \boxed{} \rightarrow \boxed{\text{C}}$

$$9 \times 10 = \boxed{} \rightarrow \boxed{\text{N}}$$

$4 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{D}}$

$$5 \times 11 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$7 \times 9 = \boxed{} \rightarrow \boxed{0}$$

$9 \times 4 = \square \rightarrow \boxed{\mathbf{S}}$

$11 \times 12 = \square \rightarrow \boxed{\mathbf{U}}$

$2 \times 3 = \square \rightarrow \mathbf{E}$

$8 \times 8 = \boxed{} \rightarrow \boxed{\text{A}}$

$7 \times 12 = \boxed{} \rightarrow \boxed{\text{H}}$

$4 \times 11 = \boxed{} \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 2

Rounding

The arena scoreboard display rounds total seating capacity to the nearest thousand, unlocking a digital file.

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

T					T												T
900	2300	4300	170	300	900	90	4300	230	230	230	1100	170	1100	20	4300	290	900

										T		
2300	1100	90	430	4300	430	230	2300	130	130	900	4300	500

Round 915 to the nearest hundred → **T**

Round 4,306 to the nearest hundred → **E**

Round 463 to the nearest hundred → **R**

Round 290 to the nearest ten → **F**

Round 2,318 to the nearest hundred → **H**

Round 430 to the nearest ten → **D**

Round 132 to the nearest ten → **O**

Round 170 to the nearest ten → **W**

Round 1,143 to the nearest hundred → **A**

Round 228 to the nearest ten → **S**

Round 17 to the nearest ten → **L**

Round 255 to the nearest hundred → **I**

Round 89 to the nearest ten → **N**

Scratch space:

CLUE 4

Bar model word problems

Studying comparison bar charts of team footwear supplies gives a clear visual picture of the missing items.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A strand of **B** **I** **R** hair turned up at the scene.

105 10 115 115 112 10 27 13 64

One group collected 15 basketballs and another group collected 90 basketballs. How many basketballs in all?

draw a bar model

Answer: → **B**

One group collected 9 basketballs and another group collected 1 basketballs. How many basketballs in all?

draw a bar model

Answer: → **U**

Equipment manager used $\frac{1}{2}$ of the cones on the first day. The other 56 cones were used the next day. How many cones were there in all?

draw a bar model

Answer: → **C**

Equipment manager used $\frac{2}{3}$ of the sneakers on the first day. The other 9 sneakers were used the next day. How many sneakers were there in all?

draw a bar model

Answer: → **T**

There were 40 clipboards in all. 27 clipboards were used. How many clipboards are left?

draw a bar model

Answer: → **H**

Equipment manager has 8 times as many cones as a teammate. The teammate has 8 cones. How many cones does equipment manager have?

draw a bar model

Answer: → **A**

Equipment manager shares 230 sneakers equally among 2 teams. How many sneakers does each team get?

draw a bar model

Answer: → **Z**

CLUE 5**Division facts (1-12) - the last clue**

Dividing training cones evenly into practice station groups yields the remaining clue letter.

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:

$42 \div 7 = \boxed{}$

$40 \div 8 = \boxed{}$

$54 \div 6 = \boxed{}$

$120 \div 12 = \boxed{}$

$6 \div 3 = \boxed{}$

$36 \div 9 = \boxed{}$

$56 \div 8 = \boxed{}$

$15 \div 5 = \boxed{}$

$10 \div 10 = \boxed{}$

$66 \div 6 = \boxed{}$

$36 \div 3 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain swapped the official game ball, then drained air with a ball pump.
2. The villain blew a deafening whistle signal, then erased the tactical play diagram.
3. The villain hid the varsity high-top sneakers, then reset the digital shot clock.
4. The villain hid the varsity high-top sneakers, then tangled the spare ankle braces.
5. The villain swapped the official game ball, then reset the digital shot clock.
6. The villain hid the varsity high-top sneakers, then erased the tactical play diagram.
7. The villain dusted the court with slick powder, then drained air with a ball pump.
8. The villain loosened the breakaway rim bolts, then erased the tactical play diagram.
9. The villain blew a deafening whistle signal, then reset the digital shot clock.
10. The villain swapped the official game ball, then tangled the spare ankle braces.
11. The villain loosened the breakaway rim bolts, then unhooked the mesh goal net.
12. The villain dusted the court with slick powder, then reset the digital shot clock.

Answer Key

The Hardwood Arena Mystery

Culprit: Diana

Breakaway Rim · Tactical Clipboard · Left Handed Shooter · Buzz Cut Hair · Deflated Air Pressure

Trail: Start 21 → Clue 1 15 → Clue 2 11 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE SUSPECT DOES NOT USE A BALL PUMP"

$12 \times 12 = 144$ (T) · $6 \times 7 = 42$ (M) · $4 \times 7 = 28$ (B) · $1 \times 7 = 7$ (C) · $9 \times 10 = 90$ (N) · $4 \times 1 = 4$ (D) · $5 \times 11 = 55$ (P) · $7 \times 9 = 63$ (O) · $9 \times 4 = 36$ (S) · $11 \times 12 = 132$ (U) · $2 \times 3 = 6$ (E) · $8 \times 8 = 64$ (A) · $7 \times 12 = 84$ (H) · $4 \times 11 = 44$ (L)

Clue 2 (Rounding): "THE WITNESS SAW A LEFT HANDED SHOOTER"

Round 915 to the nearest hundred = 900 (T) · Round 4,306 to the nearest hundred = 4300 (E) · Round 463 to the nearest hundred = 500 (R) · Round 290 to the nearest ten = 290 (F) · Round 2,318 to the nearest hundred = 2300 (H) · Round 430 to the nearest ten = 430 (D) · Round 132 to the nearest ten = 130 (O) · Round 170 to the nearest ten = 170 (W) · Round 1,143 to the nearest hundred = 1100 (A) · Round 228 to the nearest ten = 230 (S) · Round 17 to the nearest ten = 20 (L) · Round 255 to the nearest hundred = 300 (I) · Round 89 to the nearest ten = 90 (N)

Clue 3 (Place value): "THE DEFENDER USED DEFLATED AIR PRESSURE"

What is the value of the 9 in 66,936? = 900 (T) · What is the value of the 6 in 716,377? = 6000 (E) · What is the value of the 8 in 100,085? = 80 (D) · What is the value of the 8 in 648,491? = 8000 (R) · What is the value of the 4 in 14,217? = 4000 (N) · What is the value of the 4 in 69,242? = 40 (L) · What is the value of the 3 in 768,321? = 300 (I) · What is the value of the 2 in 911,726? = 20 (U) · What is the value of the 7 in 880,275? = 70 (S) · What is the value of the 4 in 352,432? = 400 (H) · What is the value of the 6 in 71,764? = 60 (A) · What is the value of the 5 in 64,583? = 500 (P) · What is the value of the 8 in 139,814? = 800 (F)

Clue 4 (Bar model word problems): "BUZZ CUT HAIR"

One group collected 15 basketballs and another group collected 90 basketballs. How many basketballs in all? = 105 (B) · One group collected 9 basketballs and another group collected 1 basketballs. How many basketballs in all? = 10 (U) · Equipment manager used $\frac{1}{2}$ of the cones on the first day. The other 56 cones were used the next day. How many cones were there in all? = 112 (C) · Equipment manager used $\frac{2}{3}$ of the sneakers on the first day. The other 9 sneakers were used the next day. How many sneakers were there in all? = 27 (T) · There were 40 clipboards in all. 27 clipboards were used. How many clipboards are left? = 13 (H) · Equipment manager has 8 times as many cones as a teammate. The teammate has 8 cones. How many cones does equipment manager have? = 64 (A) · Equipment manager shares 230 sneakers equally among 2 teams. How many sneakers does each team get? = 115 (Z)

Clue 5 (Division facts (1-12)): surviving statement is box 8 → Diana

$42 \div 7 = 6$ · $40 \div 8 = 5$ · $54 \div 6 = 9$ · $120 \div 12 = 10$ · $6 \div 3 = 2$ · $36 \div 9 = 4$ · $56 \div 8 = 7$ · $15 \div 5 = 3$ · $10 \div 10 = 1$ · $66 \div 6 = 11$ · $36 \div 3 = 12$