



# The Championship Trophy Heist

Grade 8 math · Exponents, Square roots, Pythagorean theorem, Order of operations, Two-step equations · Reading level grades 7-9

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

The gold MVP trophy has vanished from the display case right before the buzzer of the championship game. The arena cameras captured a blurry figure in athletic gear fleeing through the tunnel. Solve the basketball data puzzles to reveal the clues, cross-reference the suspect sheet, and recover the prize.

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 crusher is** \_\_\_\_\_

## Possible suspects

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

| NAME                       | SIGNATURE SKILL | SIGNATURE GEAR | SHOOTING HAND | HAIRSTYLE  | DEFENSIVE FLAW   |
|----------------------------|-----------------|----------------|---------------|------------|------------------|
| Ja Morant                  | Sharpshooter    | Lucky Headband | Right-handed  | Crew Cut   | Zone Defense     |
| Kyrie Irving               | Glass Cleaner   | Lucky Headband | Left-handed   | Buzz Cut   | Full Court Press |
| Donovan Mitchell           | Dunk Master     | High-top Shoes | Right-handed  | Crew Cut   | Full Court Press |
| Stephen Curry              | Glass Cleaner   | Ankle Braces   | Left-handed   | Buzz Cut   | Zone Defense     |
| Jaylen Brown               | Dunk Master     | Sleek Goggles  | Right-handed  | Buzz Cut   | Full Court Press |
| James Harden               | Glass Cleaner   | Lucky Headband | Left-handed   | Dreadlocks | Full Court Press |
| Damian Lillard             | Glass Cleaner   | High-top Shoes | Left-handed   | Buzz Cut   | Full Court Press |
| Bam Adebayo                | Sharpshooter    | Lucky Headband | Left-handed   | Dreadlocks | Full Court Press |
| Trae Young                 | Sharpshooter    | Ankle Braces   | Left-handed   | Dreadlocks | Zone Defense     |
| Luka Doncic                | Rim Protector   | Lucky Headband | Right-handed  | Buzz Cut   | Zone Defense     |
| LeBron James               | Playmaker       | Ankle Braces   | Right-handed  | Dreadlocks | Zone Defense     |
| Kawhi Leonard              | Glass Cleaner   | High-top Shoes | Right-handed  | Buzz Cut   | Full Court Press |
| Jimmy Butler               | Sharpshooter    | Red Wristband  | Left-handed   | Buzz Cut   | Full Court Press |
| Devin Booker               | Sharpshooter    | High-top Shoes | Left-handed   | Crew Cut   | Full Court Press |
| Jayson Tatum               | Playmaker       | High-top Shoes | Left-handed   | Dreadlocks | Full Court Press |
| Shai<br>Gilgeous-Alexander | Sharpshooter    | Red Wristband  | Right-handed  | Crew Cut   | Full Court Press |
| Russell Westbrook          | Sharpshooter    | Ankle Braces   | Right-handed  | Buzz Cut   | Full Court Press |
| Paul George                | Glass Cleaner   | Lucky Headband | Left-handed   | Crew Cut   | Full Court Press |
| Anthony Davis              | Playmaker       | Ankle Braces   | Right-handed  | Buzz Cut   | Full Court Press |
| Joel Embiid                | Dunk Master     | High-top Shoes | Right-handed  | Buzz Cut   | Double Team      |
| Kevin Durant               | Sharpshooter    | Red Wristband  | Right-handed  | Buzz Cut   | Full Court Press |

## CLUE 1 Exponents

To map out the security system's bracket-style grid, the coach squares the base power levels of the backup generators.

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

|     |    |     |     |    |     |     |     |     |    |     |     |     |    |    |   |     |     |     |
|-----|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|-----|----|----|---|-----|-----|-----|
| T   |    |     | T   |    |     |     |     |     |    |     |     |     |    | T  |   |     |     |     |
| 25  | 64 | 100 | 25  | 64 | 169 | 100 | 343 | 121 | 32 | 100 | 256 | 324 | 32 | 25 | 4 | 100 | 729 | 625 |
|     |    |     |     |    |     |     |     |     |    |     |     |     |    |    |   |     |     |     |
| 361 | 32 | 361 | 361 | 49 | 100 | 256 |     |     |    |     |     |     |    |    |   |     |     |     |

|                                       |                                       |                                       |                                       |
|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| $5^2 = \square \rightarrow \text{T}$  | $4^3 = \square \rightarrow \text{H}$  | $2^5 = \square \rightarrow \text{O}$  | $19^2 = \square \rightarrow \text{G}$ |
| $2^2 = \square \rightarrow \text{W}$  | $13^2 = \square \rightarrow \text{I}$ | $10^2 = \square \rightarrow \text{E}$ | $5^4 = \square \rightarrow \text{R}$  |
| $7^3 = \square \rightarrow \text{F}$  | $7^2 = \square \rightarrow \text{L}$  | $9^3 = \square \rightarrow \text{A}$  | $11^2 = \square \rightarrow \text{D}$ |
| $18^2 = \square \rightarrow \text{N}$ | $2^8 = \square \rightarrow \text{S}$  |                                       |                                       |

Scratch space:

**CLUE 2**

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

Diagram illustrating the multiplication table for the group  $G$  (order 20). The table is shown in two rows of five boxes each, with a gap between the rows. The boxes are labeled with numbers 1 through 10 below them. The boxes with 'T' are highlighted in orange.

|   |    |   |    |    |    |    |    |    |    |    |    |    |    |    |   |   |    |  |  |
|---|----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|---|----|--|--|
| T |    |   |    |    |    |    |    |    |    |    |    |    |    |    |   |   |    |  |  |
| 6 | 16 | 7 | 22 | 9  | 12 | 12 | 8  | 9  | 10 | 18 | 16 | 15 | 6  | 21 | 9 | 6 | 16 |  |  |
| T |    |   |    |    |    |    |    |    | T  |    |    |    |    |    |   |   |    |  |  |
| 6 | 16 | 7 | 9  | 13 | 13 | 9  | 23 | 16 | 6  | 16 | 8  | 10 | 20 |    |   |   |    |  |  |

sqrt(36) =  →

sqrt(144) =  →

sqrt(484) =  →

sqrt(256) =  → **H**

$\text{sqrt}(81) = \boxed{\phantom{00}} \rightarrow \boxed{I}$

$\text{sqrt}(64) =$    $\rightarrow$  **A**

sqrt(49) =  → **E**

sqrt(225) =  →

sqrt(441) =  → **W**

$\text{sqrt}(529) = \boxed{\phantom{000}} \rightarrow \boxed{\text{G}}$

sqrt(400) =  → **D**

sqrt(324) =  → **S**

sqrt(100) =  → **N**

sqrt(169) =  → **R**

Scratch space:

## Pythagorean theorem

To calculate the fastest path for a diagonal outlet pass, the team calculates the hypotenuse from the baseline corner to the wing.

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

74 40 10 34 17 87 13 50 10 85 74 37 58 10 87 74 74 40 10

17 30 50 50 52 37 30 65 74 5 65 10 68 68

legs 24 and 70, hypotenuse =   $\rightarrow$  **T**

legs 3 and 4, hypotenuse =   $\rightarrow$  **P**

legs 40 and 75, hypotenuse =  → **D**

legs 32 and 60, hypotenuse =   $\rightarrow$  **S**

legs 25 and 60, hypotenuse =  → **R**

legs 18 and 24, hypotenuse =  → **U**

legs 16 and 30, hypotenuse =   $\rightarrow$  **Y**

legs 20 and 48, hypotenuse =   $\rightarrow$  **C**

legs 40 and 42, hypotenuse =  → **B**

legs 8 and 15, hypotenuse =  → **F**

legs 6 and 8, hypotenuse =   $\rightarrow$  **E**

legs 5 and 12, hypotenuse =   $\rightarrow$   I

legs 12 and 35, hypotenuse =   $\rightarrow$

legs 24 and 32, hypotenuse =   $\rightarrow$  **H**

legs 14 and 48, hypotenuse =   $\rightarrow$  **L**

legs 60 and 63, hypotenuse =   $\rightarrow$  **A**

Scratch space:

**CLUE 4**
**Order of operations**

Analyzing the play-by-play scoring log requires evaluating the bracketed multi-step team efficiency rating first.

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

|          |    |    |    |    |    |    |    |    |    |     |    |    |          |    |     |    |
|----------|----|----|----|----|----|----|----|----|----|-----|----|----|----------|----|-----|----|
| <b>A</b> |    |    |    |    |    |    |    |    |    |     |    |    | <b>A</b> |    |     |    |
| 36       | 82 | 55 | 47 | 87 | 32 | 37 | 38 | 18 | 18 | 120 | 38 | 32 | 55       | 36 | 116 | 87 |

  

|    |          |    |    |    |    |    |          |    |    |     |     |
|----|----------|----|----|----|----|----|----------|----|----|-----|-----|
|    | <b>A</b> |    |    |    |    |    | <b>A</b> |    |    |     |     |
| 16 | 36       | 82 | 47 | 69 | 32 | 55 | 13       | 37 | 36 | 103 | 103 |

$7 \times 9 - 27 = \square \rightarrow \text{A}$

$12 \times 7 - 2 = \square \rightarrow \text{S}$

$6 + 6 \times 2 = \square \rightarrow \text{Z}$

$92 + 6 \times 4 = \square \rightarrow \text{I}$

$5 \times 8 - 27 = \square \rightarrow \text{E}$

$9 \times 12 - 21 = \square \rightarrow \text{R}$

$3 \times 9 - 11 = \square \rightarrow \text{W}$

$10 \times 9 - 21 = \square \rightarrow \text{N}$

$27 + 5 \times 4 = \square \rightarrow \text{O}$

$3 \times 12 - 4 = \square \rightarrow \text{T}$

$7 \times 11 - 22 = \square \rightarrow \text{H}$

$40 + 9 \times 7 = \square \rightarrow \text{L}$

$12 \times 12 - 24 = \square \rightarrow \text{C}$

$9 \times 6 - 17 = \square \rightarrow \text{B}$

$7 \times 6 - 4 = \square \rightarrow \text{U}$

Scratch space:

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

The head scout sets up an equation to isolate the exact number of drills needed to hit the target shooting percentage.

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:**

$3x + 10 = 19, x = \boxed{\phantom{00}}$

$5x + 10 = 30, x = \boxed{\phantom{00}}$

$2x + 8 = 20, x = \boxed{\phantom{00}}$

$6x + 11 = 77, x = \boxed{\phantom{00}}$

$2x + 8 = 12, x = \boxed{\phantom{00}}$

$2x + 4 = 28, x = \boxed{\phantom{00}}$

$6x + 9 = 15, x = \boxed{\phantom{00}}$

$2x + 8 = 28, x = \boxed{\phantom{00}}$

$6x + 7 = 37, x = \boxed{\phantom{00}}$

$4x + 2 = 30, x = \boxed{\phantom{00}}$

$6x + 8 = 62, x = \boxed{\phantom{00}}$

**Step 2 - cross out the sentence with each answer:**

1. The villain drove hard to the hoop for a layup, then adjusted their lucky headband.
2. The villain drove hard to the hoop for a layup, then cleaned their sleek goggles.
3. The villain grabbed a crucial offensive rebound, then squeaked their high-top shoes on the court.
4. The villain drained a clutch three-pointer, then tightened their red wristband.
5. The villain grabbed a crucial offensive rebound, then cleaned their sleek goggles.
6. The villain dished out a brilliant no-look pass, then strapped on their ankle braces.
7. The villain swatted away a game-winning shot, then adjusted their lucky headband.
8. The villain drained a clutch three-pointer, then strapped on their ankle braces.
9. The villain grabbed a crucial offensive rebound, then strapped on their ankle braces.
10. The villain drove hard to the hoop for a layup, then squeaked their high-top shoes on the court.
11. The villain swatted away a game-winning shot, then cleaned their sleek goggles.
12. The villain drove hard to the hoop for a layup, then tightened their red wristband.

# Answer Key

## The Championship Trophy Heist

### Culprit: Russell Westbrook

Sharpshooter · Ankle Braces · Right-handed · Buzz Cut · Full Court Press

Trail: Start 21 → Clue 1 20 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

#### Clue 1 (Exponents): "THE THIEF DOES NOT WEAR GOGGLES"

$5^2 = 25$  (T) ·  $4^3 = 64$  (H) ·  $2^5 = 32$  (O) ·  $19^2 = 361$  (G) ·  $2^2 = 4$  (W) ·  $13^2 = 169$  (I) ·  $10^2 = 100$  (E) ·  $5^4 = 625$  (R) ·  $7^3 = 343$  (F) ·  $7^2 = 49$  (L) ·  $9^3 = 729$  (A) ·  $11^2 = 121$  (D) ·  $18^2 = 324$  (N) ·  $2^8 = 256$  (S)

#### Clue 2 (Square roots): "THE VILLAIN SHOT WITH THEIR RIGHT HAND"

$\sqrt{36} = 6$  (T) ·  $\sqrt{144} = 12$  (L) ·  $\sqrt{484} = 22$  (V) ·  $\sqrt{256} = 16$  (H) ·  $\sqrt{81} = 9$  (I) ·  $\sqrt{64} = 8$  (A) ·  $\sqrt{49} = 7$  (E) ·  $\sqrt{225} = 15$  (O) ·  $\sqrt{441} = 21$  (W) ·  $\sqrt{529} = 23$  (G) ·  $\sqrt{400} = 20$  (D) ·  $\sqrt{324} = 18$  (S) ·  $\sqrt{100} = 10$  (N) ·  $\sqrt{169} = 13$  (R)

#### Clue 3 (Pythagorean theorem): "THEY FAILED TO BEAT THE FULL COURT PRESS"

legs 24 and 70, hypotenuse = 74 (T) · legs 3 and 4, hypotenuse = 5 (P) · legs 40 and 75, hypotenuse = 85 (D) · legs 32 and 60, hypotenuse = 68 (S) · legs 25 and 60, hypotenuse = 65 (R) · legs 18 and 24, hypotenuse = 30 (U) · legs 16 and 30, hypotenuse = 34 (Y) · legs 20 and 48, hypotenuse = 52 (C) · legs 40 and 42, hypotenuse = 58 (B) · legs 8 and 15, hypotenuse = 17 (F) · legs 6 and 8, hypotenuse = 10 (E) · legs 5 and 12, hypotenuse = 13 (I) · legs 12 and 35, hypotenuse = 37 (O) · legs 24 and 32, hypotenuse = 40 (H) · legs 14 and 48, hypotenuse = 50 (L) · legs 60 and 63, hypotenuse = 87 (A)

#### Clue 4 (Order of operations): "A SHORT BUZZ CUT HAIR WAS ON THE BALL"

$7 \times 9 - 27 = 36$  (A) ·  $12 \times 7 - 2 = 82$  (S) ·  $6 + 6 \times 2 = 18$  (Z) ·  $92 + 6 \times 4 = 116$  (I) ·  $5 \times 8 - 27 = 13$  (E) ·  $9 \times 12 - 21 = 87$  (R) ·  $3 \times 9 - 11 = 16$  (W) ·  $10 \times 9 - 21 = 69$  (N) ·  $27 + 5 \times 4 = 47$  (O) ·  $3 \times 12 - 4 = 32$  (T) ·  $7 \times 11 - 22 = 55$  (H) ·  $40 + 9 \times 7 = 103$  (L) ·  $12 \times 12 - 24 = 120$  (C) ·  $9 \times 6 - 17 = 37$  (B) ·  $7 \times 6 - 4 = 38$  (U)

#### Clue 5 (Two-step equations): surviving statement is box 8 → Russell Westbrook

$3x + 10 = 19, x = 3$  ·  $5x + 10 = 30, x = 4$  ·  $2x + 8 = 20, x = 6$  ·  $6x + 11 = 77, x = 11$  ·  $2x + 8 = 12, x = 2$  ·  $2x + 4 = 28, x = 12$  ·  $6x + 9 = 15, x = 1$  ·  $2x + 8 = 28, x = 10$  ·  $6x + 7 = 37, x = 5$  ·  $4x + 2 = 30, x = 7$  ·  $6x + 8 = 62, x = 9$