



The Gridiron Playbook Heist

Grade 10 math · Pythagorean theorem, Word problems, Bar models, Square roots, Missing addends · Reading level grades 7-9

Detective: _____ **Date:** _____

Just hours before the kickoff of the ultimate championship game, the Head Coach realized the top-secret playbook was gone! A mysterious figure was spotted running off the field. You must analyze the evidence, solve the puzzles, and help the team get their playbook back 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 Playbook Bandit 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 GEAR	THROWING HAND	HAIR ACCESSORY	ON-FIELD WEAKNESS
T J Watt	bullet pass	visor shield	left handed thrower	blonde dreadlocks	slippery turf
Saquon Barkley	beast mode	visor shield	right handed thrower	neon green headband	slippery turf
Jalen Hurts	diving catch	gps smartwatch	right handed thrower	blonde dreadlocks	slippery turf
Micah Parsons	ankle breaker	noisemaker helmet	right handed thrower	blonde dreadlocks	blitz pressure
Davante Adams	bullet pass	sticky gloves	left handed thrower	neon green headband	slippery turf
Derwin James	ankle breaker	gps smartwatch	right handed thrower	blonde dreadlocks	blitz pressure
Dak Prescott	beast mode	visor shield	left handed thrower	neon green headband	loud crowd noise
Patrick Mahomes	sonic sprint	heated cleats	right handed thrower	crimson dye	loud crowd noise
Travis Kelce	bullet pass	noisemaker helmet	left handed thrower	crimson dye	loud crowd noise
Aaron Rodgers	sonic sprint	noisemaker helmet	right handed thrower	crimson dye	blitz pressure
Josh Allen	sonic sprint	heated cleats	right handed thrower	blonde dreadlocks	blitz pressure
Justin Jefferson	bullet pass	gps smartwatch	right handed thrower	blonde dreadlocks	blitz pressure
George Kittle	diving catch	gps smartwatch	left handed thrower	blonde dreadlocks	slippery turf
Lamar Jackson	ankle breaker	heated cleats	left handed thrower	crimson dye	loud crowd noise
Deebo Samuel	beast mode	sticky gloves	left handed thrower	crimson dye	blitz pressure
Tyreek Hill	bullet pass	noisemaker helmet	left handed thrower	blonde dreadlocks	blitz pressure
Stefon Diggs	beast mode	noisemaker helmet	right handed thrower	blonde dreadlocks	blitz pressure
Christian McCaffrey	diving catch	sticky gloves	right handed thrower	blonde dreadlocks	loud crowd noise
Kirk Cousins	beast mode	visor shield	right handed thrower	neon green headband	loud crowd noise
Myles Garrett	beast mode	visor shield	left handed thrower	blonde dreadlocks	blitz pressure
CeeDee Lamb	diving catch	gps smartwatch	right handed thrower	neon green headband	loud crowd noise

CLUE 1
Pythagorean theorem

The assistant coach sketched a tactical bar model on the whiteboard to divide up the scouting tape. Solve this visual breakdown to reveal a clue about what gear the thief avoided.

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

T			T					T									T				
125	30	26	125	123	68	111	26	125	65	5	65	100	51	125	85	26	123	68			
			T														T				
30	26	123	125	26	65	50	34	26	123	125	29										

legs 35 and 120, hypotenuse = → **T**

legs 27 and 120, hypotenuse = → **A**

legs 18 and 24, hypotenuse = → **H**

legs 28 and 96, hypotenuse = → **N**

legs 14 and 48, hypotenuse = → **C**

legs 25 and 60, hypotenuse = → **D**

legs 10 and 24, hypotenuse = → **E**

legs 16 and 30, hypotenuse = → **L**

legs 32 and 60, hypotenuse = → **R**

legs 36 and 105, hypotenuse = → **G**

legs 24 and 45, hypotenuse = → **O**

legs 20 and 21, hypotenuse = → **S**

legs 3 and 4, hypotenuse = → **I**

legs 40 and 75, hypotenuse = → **W**

Scratch space:

CLUE 2

Word problems

We calculated the training facility's energy usage using a multi-step word problem. Solving this equation points us to a major clue about the suspect's throwing hand.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

R									D	E	D			R	O	W	E	R
27	57	95	87	7	87	28	74					7	87	27			27	

Quarterback lined up 9 rows of 3 playbooks. How many playbooks in all?

Answer: → **R**

Quarterback found 23 water bottles yesterday and 5 more today. How many water bottles in all?

Answer: → **A**

There were 109 footballs. 14 were used up. How many footballs are left?

Answer: → **G**

There were 113 water bottles. 39 were used up. How many water bottles are left?

Answer: → **N**

There were 108 helmets. 21 were used up. How many helmets are left?

Answer: → **H**

There were 27 water bottles. 20 were used up. How many water bottles are left?

Answer: → **T**

There were 59 whistles. 2 were used up. How many whistles are left?

Answer: → **I**

Scratch space:

CLUE 3

Bar model word problems

The quarterback ran a deep diagonal post route. By using the Pythagorean theorem to find the exact distance of his path across the turf, we recovered a clue about the thief's weakness.

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

Someone scared the villain off with B E S S U E .

108 40 91 39 25 44 58 58

Quarterback has 12 times as many water bottles as a teammate. The teammate has 9 water bottles. How many water bottles does quarterback have?

draw a bar model

Answer: → B

One group collected 13 footballs and another group collected 27 footballs. How many footballs in all?

draw a bar model

Answer: → L

There were 85 whistles in all. 27 whistles were used. How many whistles are left?

draw a bar model

Answer: → R

The red team has 29 footballs and the blue team has 4 footballs. How many more footballs does the red team have?

draw a bar model

Answer: → Z

The red team has 79 helmets and the blue team has 35 helmets. How many more helmets does the red team have?

draw a bar model

Answer: → P

Quarterback has 182 water bottles, packed 2 to a bag. How many bags can be filled?

draw a bar model

Answer: → I

Quarterback has 117 footballs, packed 3 to a bag. How many bags can be filled?

draw a bar model

Answer: → T

CLUE 4 Square roots

The groundskeepers marked off a perfect square of turf for the halftime show. Finding the square root of its total area reveals the hair evidence dropped near the fifty yard line.

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

T																
11	18	6	14	5	6	19	6	18	24	22	23	8	9	19	22	6
22	15	6	24	22	8	9	5	2	17	20	23	6	15	14		

$\sqrt{121} = \square \rightarrow \boxed{\text{T}}$

$\sqrt{225} = \square \rightarrow \boxed{\text{R}}$

$\sqrt{361} = \square \rightarrow \boxed{\text{N}}$

$\sqrt{81} = \square \rightarrow \boxed{\text{O}}$

$\sqrt{4} = \square \rightarrow \boxed{\text{K}}$

$\sqrt{64} = \square \rightarrow \boxed{\text{L}}$

$\sqrt{529} = \square \rightarrow \boxed{\text{B}}$

$\sqrt{400} = \square \rightarrow \boxed{\text{I}}$

$\sqrt{196} = \square \rightarrow \boxed{\text{S}}$

$\sqrt{484} = \square \rightarrow \boxed{\text{D}}$

$\sqrt{576} = \square \rightarrow \boxed{\text{A}}$

$\sqrt{324} = \square \rightarrow \boxed{\text{H}}$

$\sqrt{25} = \square \rightarrow \boxed{\text{C}}$

$\sqrt{289} = \square \rightarrow \boxed{\text{F}}$

$\sqrt{36} = \square \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 5**Missing addends - the last clue**

The offensive drive tracker is missing some key plays to match the final score. Solve for the missing yardage to unlock the final piece of the culprit's identity.

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:

$16 + \underline{\quad} = 19$

$28 + \underline{\quad} = 40$

$9 + \underline{\quad} = 13$

$40 + \underline{\quad} = 45$

$12 + \underline{\quad} = 19$

$3 + \underline{\quad} = 14$

$5 + \underline{\quad} = 15$

$11 + \underline{\quad} = 20$

$13 + \underline{\quad} = 15$

$25 + \underline{\quad} = 31$

$37 + \underline{\quad} = 45$

Step 2 - cross out the sentence with each answer:

1. The villain swipes the lucky game ball, then escapes through the stadium tunnel.
2. The villain steals the team mascot mascot suit, then jumps over the locker room gate.
3. The villain snatches the golden whistle, then vanishes into the cheering crowd.
4. The villain snatches the golden whistle, then escapes through the stadium tunnel.
5. The villain intercepts the championship playbook, then sprints past the security guards.
6. The villain swipes the lucky game ball, then vanishes into the cheering crowd.
7. The villain steals the team mascot mascot suit, then vanishes into the cheering crowd.
8. The villain intercepts the championship playbook, then jumps over the locker room gate.
9. The villain swipes the lucky game ball, then jumps over the locker room gate.
10. The villain intercepts the championship playbook, then escapes through the stadium tunnel.
11. The villain grabs the golden championship ring, then sprints past the security guards.
12. The villain intercepts the championship playbook, then vanishes into the cheering crowd.

Answer Key

The Gridiron Playbook Heist

Culprit: Stefon Diggs

beast mode · noisemaker helmet · right handed thrower · blonde dreadlocks · blitz pressure

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

Clue 1 (Pythagorean theorem): "THE TARGET DID NOT WEAR HEATED CLEATS"

legs 35 and 120, hypotenuse = 125 (T) · legs 27 and 120, hypotenuse = 123 (A) · legs 18 and 24, hypotenuse = 30 (H) · legs 28 and 96, hypotenuse = 100 (N) · legs 14 and 48, hypotenuse = 50 (C) · legs 25 and 60, hypotenuse = 65 (D) · legs 10 and 24, hypotenuse = 26 (E) · legs 16 and 30, hypotenuse = 34 (L) · legs 32 and 60, hypotenuse = 68 (R) · legs 36 and 105, hypotenuse = 111 (G) · legs 24 and 45, hypotenuse = 51 (O) · legs 20 and 21, hypotenuse = 29 (S) · legs 3 and 4, hypotenuse = 5 (I) · legs 40 and 75, hypotenuse = 85 (W)

Clue 2 (Word problems): "RIGHT HANDED THROWER"

Quarterback lined up 9 rows of 3 playbooks. How many playbooks in all? = 27 (R) · Quarterback found 23 water bottles yesterday and 5 more today. How many water bottles in all? = 28 (A) · There were 109 footballs. 14 were used up. How many footballs are left? = 95 (G) · There were 113 water bottles. 39 were used up. How many water bottles are left? = 74 (N) · There were 108 helmets. 21 were used up. How many helmets are left? = 87 (H) · There were 27 water bottles. 20 were used up. How many water bottles are left? = 7 (T) · There were 59 whistles. 2 were used up. How many whistles are left? = 57 (I)

Clue 3 (Bar model word problems): "BLITZ PRESSURE"

Quarterback has 12 times as many water bottles as a teammate. The teammate has 9 water bottles. How many water bottles does quarterback have? = 108 (B) · One group collected 13 footballs and another group collected 27 footballs. How many footballs in all? = 40 (L) · There were 85 whistles in all. 27 whistles were used. How many whistles are left? = 58 (R) · The red team has 29 footballs and the blue team has 4 footballs. How many more footballs does the red team have? = 25 (Z) · The red team has 79 helmets and the blue team has 35 helmets. How many more helmets does the red team have? = 44 (P) · Quarterback has 182 water bottles, packed 2 to a bag. How many bags can be filled? = 91 (I) · Quarterback has 117 footballs, packed 3 to a bag. How many bags can be filled? = 39 (T)

Clue 4 (Square roots): "THE SCENE HAD BLONDE DREADLOCK FIBERS"

$\sqrt{121} = 11$ (T) · $\sqrt{225} = 15$ (R) · $\sqrt{361} = 19$ (N) · $\sqrt{81} = 9$ (O) · $\sqrt{4} = 2$ (K) · $\sqrt{64} = 8$ (L) · $\sqrt{529} = 23$ (B) · $\sqrt{400} = 20$ (I) · $\sqrt{196} = 14$ (S) · $\sqrt{484} = 22$ (D) · $\sqrt{576} = 24$ (A) · $\sqrt{324} = 18$ (H) · $\sqrt{25} = 5$ (C) · $\sqrt{289} = 17$ (F) · $\sqrt{36} = 6$ (E)

Clue 5 (Missing addends): surviving statement is box 1 → Stefon Diggs

$16 + \underline{\quad} = 19 = 3$ · $28 + \underline{\quad} = 40 = 12$ · $9 + \underline{\quad} = 13 = 4$ · $40 + \underline{\quad} = 45 = 5$ · $12 + \underline{\quad} = 19 = 7$ · $3 + \underline{\quad} = 14 = 11$ · $5 + \underline{\quad} = 15 = 10$ · $11 + \underline{\quad} = 20 = 9$ · $13 + \underline{\quad} = 15 = 2$ · $25 + \underline{\quad} = 31 = 6$ · $37 + \underline{\quad} = 45 = 8$