The Mystery of Silverwood Stables

Grade 6 math · Fractions of a number, Word problems, Bar models, Multi-step word problems · Reading level grades 7-9

Detective: _____ **Date:** _____

Just before the annual Grand Invitational, someone tampered with the equipment at Silverwood Equestrian Center, mixing up saddles, gates, and grooming gear. The Head Groom needs your deduction skills to analyze the evidence, solve the clues, and unmask the culprit before competition begins.

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 Stable Saboteur is _____

Possible suspects

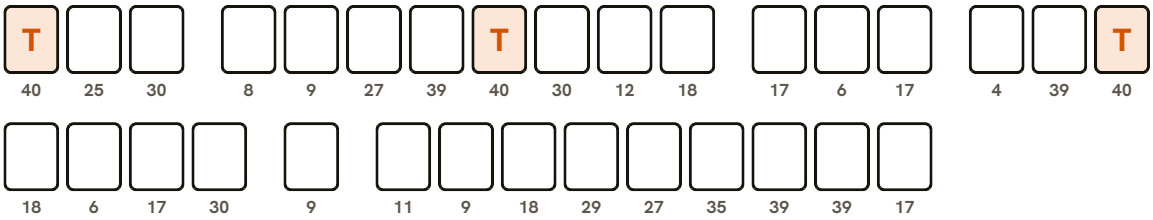
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	DISCIPLINE	HORSE BREED	REIN GRIP	STRAND COLOR	DISTRACTION
Elena Rostova	Show Jumping	Thoroughbred	Left Handed	Bay Strand	Water Splash
Gemma Cross	Endurance	Thoroughbred	Left Handed	Bay Strand	Loud Whistle
Owen Kendrick	Endurance	Warmblood	Left Handed	Bay Strand	Water Splash
Marcus Vance	Show Jumping	Quarter Horse	Left Handed	Bay Strand	Water Splash
Sienna Brooks	Cross Country	Thoroughbred	Left Handed	Chestnut Strand	Water Splash
Chloe Bennett	Show Jumping	Warmblood	Right Handed	Palomino Strand	Loud Whistle
Toby Hayes	Endurance	Arabian	Left Handed	Chestnut Strand	Shiny Ribbon
Devon Reed	Show Jumping	Mustang	Right Handed	Chestnut Strand	Water Splash
Lucas Vance	Show Jumping	Quarter Horse	Left Handed	Bay Strand	Shiny Ribbon
Audrey Paige	Dressage	Mustang	Left Handed	Bay Strand	Loud Whistle
Julian Thorne	Endurance	Quarter Horse	Left Handed	Bay Strand	Shiny Ribbon
Zoe Callahan	Reining	Thoroughbred	Left Handed	Bay Strand	Water Splash
Tess Montgomery	Dressage	Arabian	Left Handed	Chestnut Strand	Shiny Ribbon
Wyatt Cooper	Endurance	Arabian	Right Handed	Bay Strand	Water Splash
Mason Drake	Show Jumping	Mustang	Left Handed	Chestnut Strand	Water Splash
Gavin Mercer	Endurance	Arabian	Left Handed	Palomino Strand	Water Splash
Piper Finch	Reining	Arabian	Right Handed	Bay Strand	Water Splash
Harper Lee	Cross Country	Arabian	Left Handed	Bay Strand	Water Splash
Dante Silva	Dressage	Arabian	Right Handed	Chestnut Strand	Shiny Ribbon
Nora Wilder	Reining	Mustang	Left Handed	Chestnut Strand	Loud Whistle
Liam Sterling	Show Jumping	Quarter Horse	Left Handed	Palomino Strand	Loud Whistle

CLUE 1 Fractions of a number

> The head groom found a ledger listing misplaced gear across several stalls, requiring careful multi step tallying to pinpoint the suspect.

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



1/2 of 80 = ☐ → T	7/10 of 50 = ☐ → L	1/10 of 80 = ☐ → S
5/10 of 34 = ☐ → D	3/8 of 16 = ☐ → I	2/8 of 72 = ☐ → R
1/5 of 20 = ☐ → N	1/3 of 117 = ☐ → O	3/8 of 80 = ☐ → E
5/6 of 30 = ☐ → H	1/4 of 36 = ☐ → A	1/5 of 145 = ☐ → M
3/4 of 36 = ☐ → B	2/10 of 60 = ☐ → U	2/4 of 22 = ☐ → W

Scratch space:

CLUE 2 Word problems

Stable records reveal strange discrepancies in daily feed distribution that point directly toward one rider.

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

A witness saw the villain was

L							D		D
57	74	56	71	80	6	20		74	

.

Stable hand found 18 riding boots yesterday and 39 more today. How many riding boots in all?

Answer: ☐ → L

Stable hand lined up 3 rows of 2 saddles. How many saddles in all?

Answer: ☐ → A

There were 81 saddles. 7 were used up. How many saddles are left?

Answer: ☐ → E

Stable hand lined up 5 rows of 4 paddock buckets. How many paddock buckets in all?

Answer: ☐ → N

There were 99 paddock buckets. 28 were used up. How many paddock buckets are left?

Answer: ☐ → T

There were 88 riding boots. 8 were used up. How many riding boots are left?

Answer: ☐ → H

Stable hand found 7 bags of oats yesterday and 49 more today. How many bags of oats in all?

Answer: ☐ → F

Scratch space:

CLUE 3 Bar model word problems

To compare the training hours logged by each suspect, the detective sketched a bar model visualization.

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

W							L			H
100	126	46	38	45	87	55		126	87	

.

Stable hand has 10 times as many riding boots as a teammate. The teammate has 10 riding boots. How many riding boots does stable hand have?

draw a bar model

Answer: ☐ → W

One group collected 97 grooming brushes and another group collected 29 grooming brushes. How many grooming brushes in all?

draw a bar model

Answer: ☐ → A

Stable hand shares 174 saddles equally among 2 teams. How many saddles does each team get?

draw a bar model

Answer: ☐ → S

Stable hand used 3/5 of the paddock buckets on the first day. The other 22 paddock buckets were used the next day. How many paddock buckets were there in all?

draw a bar model

Answer: ☐ → P

Stable hand has 5 times as many bags of oats as a teammate. The teammate has 9 bags of oats. How many bags of oats does stable hand have?

draw a bar model

Answer: ☐ → R

Stable hand used 1/2 of the paddock buckets on the first day. The other 19 paddock buckets were used the next day. How many paddock buckets were there in all?

draw a bar model

Answer: ☐ → E

Stable hand used 1/2 of the paddock buckets on the first day. The other 23 paddock buckets were used the next day. How many paddock buckets were there in all?

draw a bar model

Answer: ☐ → T

CLUE 4 Multi-step word problems

> Examining the total grain supply consumed overnight, the detective calculated precise fractional amounts taken from each bin.

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

A strand of | B | | | | | | | | D | hair turned up at the scene.
80 60 67 47 37 40 60 24

Stable hand earned 4 riding boots in each of 2 rounds, plus 82 bonus riding boots. Then 10 riding boots were lost. How many riding boots are left?

Answer: ☐ → B

Stable hand earned 8 paddock buckets in each of 4 rounds, plus 39 bonus paddock buckets. Then 11 paddock buckets were lost. How many paddock buckets are left?

Answer: ☐ → A

Stable hand earned 6 saddles in each of 2 rounds, plus 36 bonus saddles. Then 11 saddles were lost. How many saddles are left?

Answer: ☐ → T

There were 275 paddock buckets in all. 1 equestrian squad used 40 paddock buckets each. The other 5 equestrian squad shared the rest equally. How many paddock buckets did each of the other equestrian squad get?

Answer: ☐ → S

Stable hand collected 90 bags of oats in the morning and 178 bags of oats in the afternoon, then split them equally among 4 equestrian squad. How many bags of oats did each get?

Answer: ☐ → Y

There were 204 grooming brushes in all. 4 equestrian squad used 39 grooming brushes each. The other 2 equestrian squad shared the rest equally. How many grooming brushes did each of the other equestrian squad get?

Answer: ☐ → N

There were 136 saddles in all. 1 equestrian squad used 16 saddles each. The other 3 equestrian squad shared the rest equally. How many saddles did each of the other equestrian squad get?

Answer: ☐ → R

Scratch space:

CLUE 5 Fractions of a number - the last clue

By calculating fractional portions of missing leather reins from the storage locker, the final clue fell into place.

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:

4/5 of 10 = ☐	3/6 of 18 = ☐	2/8 of 48 = ☐	2/4 of 10 = ☐
1/8 of 56 = ☐	1/8 of 88 = ☐	2/8 of 40 = ☐	4/10 of 10 = ☐
1/8 of 48 = ☐	5/10 of 2 = ☐	5/10 of 6 = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain unlatched the jumping arena gates, then borrowed an arabian headstall.
2. The villain unlatched the jumping arena gates, then borrowed a thoroughbred saddle pad.
3. The villain scuffed the reining pattern dirt, then borrowed an arabian headstall.
4. The villain tangled the cross country ropes, then borrowed a thoroughbred saddle pad.
5. The villain tangled the cross country ropes, then borrowed a warmblood polo wrap.
6. The villain scuffed the reining pattern dirt, then borrowed a quarter horse girth.
7. The villain swapped the practice dressage markers, then borrowed a mustang halter.
8. The villain tangled the cross country ropes, then borrowed an arabian headstall.
9. The villain unlatched the jumping arena gates, then borrowed a quarter horse girth.
10. The villain hid the endurance water buckets, then borrowed an arabian headstall.
11. The villain hid the endurance water buckets, then borrowed a mustang halter.
12. The villain scuffed the reining pattern dirt, then borrowed a thoroughbred saddle pad.

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TEACHER / PARENT

Answer Key

The Mystery of Silverwood Stables

Culprit: Elena Rostova

Show Jumping · Thoroughbred · Left Handed · Bay Strand · Water Splash

Trail: Start 21 → Clue 1 19 → Clue 2 15 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE SABOTEUR DID NOT RIDE A WARMBLOOD"

1/2 of 80 = 40 (T) · 7/10 of 50 = 35 (L) · 1/10 of 80 = 8 (S) · 5/10 of 34 = 17 (D) · 3/8 of 16 = 6 (I) · 2/8 of 72 = 18 (R) · 1/5 of 20 = 4 (N) · 1/3 of 117 = 39 (O) · 3/8 of 80 = 30 (E) · 5/6 of 30 = 25 (H) · 1/4 of 36 = 9 (A) · 1/5 of 145 = 29 (M) · 3/4 of 36 = 27 (B) · 2/10 of 60 = 12 (U) · 2/4 of 22 = 11 (W)

Clue 2 (Word problems): "LEFT HANDED"

Stable hand found 18 riding boots yesterday and 39 more today. How many riding boots in all? = 57 (L) · Stable hand lined up 3 rows of 2 saddles. How many saddles in all? = 6 (A) · There were 81 saddles. 7 were used up. How many saddles are left? = 74 (E) · Stable hand lined up 5 rows of 4 paddock buckets. How many paddock buckets in all? = 20 (N) · There were 99 paddock buckets. 28 were used up. How many paddock buckets are left? = 71 (T) · There were 88 riding boots. 8 were used up. How many riding boots are left? = 80 (H) · Stable hand found 7 bags of oats yesterday and 49 more today. How many bags of oats in all? = 56 (F)

Clue 3 (Bar model word problems): "WATER SPLASH"

Stable hand has 10 times as many riding boots as a teammate. The teammate has 10 riding boots. How many riding boots does stable hand have? = 100 (W) · One group collected 97 grooming brushes and another group collected 29 grooming brushes. How many grooming brushes in all? = 126 (A) · Stable hand shares 174 saddles equally among 2 teams. How many saddles does each team get? = 87 (S) · Stable hand used 3/5 of the paddock buckets on the first day. The other 22 paddock buckets were used the next day. How many paddock buckets were there in all? = 55 (P) · Stable hand has 5 times as many bags of oats as a teammate. The teammate has 9 bags of oats. How many bags of oats does stable hand have? = 45 (R) · Stable hand used 1/2 of the paddock buckets on the first day. The other 19 paddock buckets were used the next day. How many paddock buckets were there in all? = 38 (E) · Stable hand used 1/2 of the paddock buckets on the first day. The other 23 paddock buckets were used the next day. How many paddock buckets were there in all? = 46 (T)

Clue 4 (Multi-step word problems): "BAY STRAND"

Stable hand earned 4 riding boots in each of 2 rounds, plus 82 bonus riding boots. Then 10 riding boots were lost. How many riding boots are left? = 80 (B) · Stable hand earned 8 paddock buckets in each of 4 rounds, plus 39 bonus paddock buckets. Then 11 paddock buckets were lost. How many paddock buckets are left? = 60 (A) · Stable hand earned 6 saddles in each of 2 rounds, plus 36 bonus saddles. Then 11 saddles were lost. How many saddles are left? = 37 (T) · There were 275 paddock buckets in all. 1 equestrian squad used 40 paddock buckets each. The other 5 equestrian squad shared the rest equally. How many paddock buckets did each of the other equestrian squad get? = 47 (S) · Stable hand collected 90 bags of oats in the morning and 178 bags of oats in the afternoon, then split them equally among 4 equestrian squad. How many bags of oats did each get? = 67 (Y) · There were 204 grooming brushes in all. 4 equestrian squad used 39 grooming brushes each. The other 2 equestrian squad shared the rest equally. How many grooming brushes did each of the other equestrian squad get? = 24 (N) · There were 136 saddles in all. 1 equestrian squad used 16 saddles each. The other 3 equestrian squad shared the rest equally. How many saddles did each of the other equestrian squad get? = 40 (R)

Clue 5 (Fractions of a number): surviving statement is box 2 → Elena Rostova

4/5 of 10 = 8 · 3/6 of 18 = 9 · 2/8 of 48 = 12 · 2/4 of 10 = 5 · 1/8 of 56 = 7 · 1/8 of 88 = 11 · 2/8 of 40 = 10 · 4/10 of 10 = 4 · 1/8 of 48 = 6 · 5/10 of 2 = 1 · 5/10 of 6 = 3