



The Treehouse Mystery

Grade 10 math · Addition, Rounding, Multi-step word problems, Pythagorean theorem, Square roots · Reading level grades 1-2

Detective: _____ Date: _____

A sneaky bandit took the golden treehouse key! We must find the bandit and get it back.

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 the Sneaky Bandit is _____

Possible suspects

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

NAME	SUPER TOOL	SECRET BADGE	STEPPING FOOT	BANDANA COLOR	BEST SNACK
Toby	grappling hook	wolf badge	left foot first	green bandana	salty cheese
Emma	magic compass	owl badge	right foot first	green bandana	crunchy apple
Hugo	magic compass	bear badge	left foot first	green bandana	crunchy apple
Owen	loud whistle	wolf badge	right foot first	green bandana	sweet cookie
Quinn	super flashlight	wolf badge	left foot first	green bandana	crunchy apple
Ben	grappling hook	owl badge	right foot first	red bandana	salty cheese
Wyatt	super flashlight	wolf badge	right foot first	green bandana	crunchy apple
Uma	super flashlight	frog badge	right foot first	green bandana	sweet cookie
Noah	shiny spyglass	frog badge	left foot first	green bandana	crunchy apple
Zoe	magic compass	bear badge	right foot first	green bandana	crunchy apple
Jack	loud whistle	bear badge	left foot first	red bandana	crunchy apple
Vince	shiny spyglass	fox badge	right foot first	green bandana	crunchy apple
Mia	magic compass	fox badge	right foot first	green bandana	salty cheese
Finn	magic compass	owl badge	left foot first	red bandana	crunchy apple
Leo	grappling hook	owl badge	left foot first	green bandana	salty cheese
Dan	grappling hook	owl badge	right foot first	green bandana	crunchy apple
Ruby	grappling hook	fox badge	right foot first	red bandana	sweet cookie
Iris	magic compass	bear badge	right foot first	blue bandana	sweet cookie
Sam	loud whistle	bear badge	left foot first	blue bandana	salty cheese
Gaby	grappling hook	owl badge	right foot first	blue bandana	crunchy apple
Kai	loud whistle	owl badge	right foot first	green bandana	sweet cookie

CLUE 1

Addition

We count the gold coins in the dirt. We add them up to find a clue.

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

T									T								T
7394	8118	8787	2856	9048	2795	7706	5091	7394	7706	7138	8787	3847	2795	7138	7394		
				T													
5223	8787	9048	8790	7394	8118	8787	9324	7138	7333	2856	9048	7706	4029	8787			

$3067 + 4327 = \square \rightarrow \text{T}$

$1154 + 1641 = \square \rightarrow \text{N}$

$2712 + 4621 = \square \rightarrow \text{X}$

$1859 + 3364 = \square \rightarrow \text{W}$

$1428 + 2601 = \square \rightarrow \text{G}$

$1718 + 1138 = \square \rightarrow \text{B}$

$5139 + 4185 = \square \rightarrow \text{F}$

$2729 + 4409 = \square \rightarrow \text{O}$

$5317 + 3473 = \square \rightarrow \text{R}$

$3701 + 4005 = \square \rightarrow \text{D}$

$2321 + 1526 = \square \rightarrow \text{S}$

$4274 + 4774 = \square \rightarrow \text{A}$

$2937 + 5850 = \square \rightarrow \text{E}$

$4447 + 3671 = \square \rightarrow \text{H}$

$1756 + 3335 = \square \rightarrow \text{I}$

Scratch space:

CLUE 2

Rounding

Our old scope only shows big rounded numbers. It tells us where the bandit went.

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

T						T					T		T			T	
3000	2300	290	300	200	200	3000	4300	900	50	1700	3000	700	3000	2900	900	3000	700
		T		T						T					T		
430	50	3000	2300	3000	2300	290	900	50	20	2300	3000	300	200	200	3000		

Round 3,381 to the nearest thousand → **T**

Round 22 to the nearest ten → **G**

Round 713 to the nearest hundred → **S**

Round 303 to the nearest hundred → **F**

Round 2,940 to the nearest hundred → **A**

Round 426 to the nearest ten → **W**

Round 287 to the nearest ten → **E**

Round 1,741 to the nearest hundred → **N**

Round 46 to the nearest ten → **I**

Round 2,328 to the nearest hundred → **H**

Round 225 to the nearest hundred → **O**

Round 4,293 to the nearest hundred → **P**

Round 947 to the nearest hundred → **R**

Scratch space:

CLUE 3

Multi-step word problems

We must count boxes of fruit and bags of seeds. Follow the steps to get the next clue.

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

Someone scared the villain off with

C				C				P	P	L	E
87	55	8	27	87	49	69	66				

Ranger Pete collected 125 map in the morning and 136 map in the afternoon, then split them equally among 3 The Treehouse Club. How many map did each get?

Answer: → **C**

There were 210 badge in all. 4 The Treehouse Club used 39 badge each. The other 2 The Treehouse Club shared the rest equally. How many badge did each of the other The Treehouse Club get?

Answer: → **N**

There were 375 coin in all. 3 The Treehouse Club used 37 coin each. The other 4 The Treehouse Club shared the rest equally. How many coin did each of the other The Treehouse Club get?

Answer: → **A**

Ranger Pete earned 8 badge in each of 2 rounds, plus 47 bonus badge. Then 14 badge were lost. How many badge are left?

Answer: → **H**

Ranger Pete collected 8 map in the morning and 8 map in the afternoon, then split them equally among 2 The Treehouse Club. How many map did each get?

Answer: → **U**

Ranger Pete collected 27 badge in the morning and 111 badge in the afternoon, then split them equally among 2 The Treehouse Club. How many badge did each get?

Answer: → **Y**

Ranger Pete earned 6 shell in each of 5 rounds, plus 40 bonus shell. Then 15 shell were lost. How many shell are left?

Answer: → **R**

Scratch space:

CLUE 4

Pythagorean theorem

We look at the map grid. We find the short diagonal path across the field.

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

W																		
125	17	58	74	15	25	37	34	123	52	17	17	25	10	65	52	17	34	37
74	25	10	65	17	40	52	34	25	87	65								

legs 35 and 120, hypotenuse = → **W**

legs 25 and 60, hypotenuse = → **H**

legs 60 and 63, hypotenuse = → **C**

legs 9 and 12, hypotenuse = → **U**

legs 20 and 48, hypotenuse = → **R**

legs 8 and 15, hypotenuse = → **E**

legs 24 and 32, hypotenuse = → **B**

legs 27 and 120, hypotenuse = → **G**

legs 15 and 20, hypotenuse = → **N**

legs 24 and 70, hypotenuse = → **O**

legs 12 and 35, hypotenuse = → **D**

legs 16 and 30, hypotenuse = → **A**

legs 6 and 8, hypotenuse = → **T**

legs 40 and 42, hypotenuse = → **F**

Scratch space:

CLUE 5**Square roots - the last clue**

We find a square room. The size of one wall gives us the last 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:

$\text{sqrt}(49) = \boxed{}$

$\text{sqrt}(121) = \boxed{}$

$\text{sqrt}(9) = \boxed{}$

$\text{sqrt}(16) = \boxed{}$

$\text{sqrt}(144) = \boxed{}$

$\text{sqrt}(100) = \boxed{}$

$\text{sqrt}(64) = \boxed{}$

$\text{sqrt}(25) = \boxed{}$

$\text{sqrt}(36) = \boxed{}$

$\text{sqrt}(1) = \boxed{}$

$\text{sqrt}(81) = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain spotted the shiny key, then howled like a wild wolf.
2. The villain lit up the dark path, then howled like a wild wolf.
3. The villain found the secret trail, then hooted like a wise owl.
4. The villain signaled the team, then dashed away like a quick fox.
5. The villain spotted the shiny key, then hooted like a wise owl.
6. The villain lit up the dark path, then dashed away like a quick fox.
7. The villain swung across the trees, then hooted like a wise owl.
8. The villain found the secret trail, then hopped like a little frog.
9. The villain swung across the trees, then howled like a wild wolf.
10. The villain signaled the team, then howled like a wild wolf.
11. The villain found the secret trail, then roared like a giant bear.
12. The villain signaled the team, then hopped like a little frog.

Answer Key

The Treehouse Mystery

Culprit: Wyatt

super flashlight · wolf badge · right foot first · green bandana · crunchy apple

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

Clue 1 (Addition): "THE BANDIT DOES NOT WEAR THE FOX BADGE"

$3067 + 4327 = 7394$ (T) · $1154 + 1641 = 2795$ (N) · $2712 + 4621 = 7333$ (X) · $1859 + 3364 = 5223$ (W) · $1428 + 2601 = 4029$ (G) · $1718 + 1138 = 2856$ (B) · $5139 + 4185 = 9324$ (F) · $2729 + 4409 = 7138$ (O) · $5317 + 3473 = 8790$ (R) · $3701 + 4005 = 7706$ (D) · $2321 + 1526 = 3847$ (S) · $4274 + 4774 = 9048$ (A) · $2937 + 5850 = 8787$ (E) · $4447 + 3671 = 8118$ (H) · $1756 + 3335 = 5091$ (I)

Clue 2 (Rounding): "THE FOOTPRINT STARTS WITH THE RIGHT FOOT"

Round 3,381 to the nearest thousand = 3000 (T) · Round 22 to the nearest ten = 20 (G) · Round 713 to the nearest hundred = 700 (S) · Round 303 to the nearest hundred = 300 (F) · Round 2,940 to the nearest hundred = 2900 (A) · Round 426 to the nearest ten = 430 (W) · Round 287 to the nearest ten = 290 (E) · Round 1,741 to the nearest hundred = 1700 (N) · Round 46 to the nearest ten = 50 (I) · Round 2,328 to the nearest hundred = 2300 (H) · Round 225 to the nearest hundred = 200 (O) · Round 4,293 to the nearest hundred = 4300 (P) · Round 947 to the nearest hundred = 900 (R)

Clue 3 (Multi-step word problems): "CRUNCHY APPLE"

Ranger Pete collected 125 map in the morning and 136 map in the afternoon, then split them equally among 3 The Treehouse Club. How many map did each get? = 87 (C) · There were 210 badge in all. 4 The Treehouse Club used 39 badge each. The other 2 The Treehouse Club shared the rest equally. How many badge did each of the other The Treehouse Club get? = 27 (N) · There were 375 coin in all. 3 The Treehouse Club used 37 coin each. The other 4 The Treehouse Club shared the rest equally. How many coin did each of the other The Treehouse Club get? = 66 (A) · Ranger Pete earned 8 badge in each of 2 rounds, plus 47 bonus badge. Then 14 badge were lost. How many badge are left? = 49 (H) · Ranger Pete collected 8 map in the morning and 8 map in the afternoon, then split them equally among 2 The Treehouse Club. How many map did each get? = 8 (U) · Ranger Pete collected 27 badge in the morning and 111 badge in the afternoon, then split them equally among 2 The Treehouse Club. How many badge did each get? = 69 (Y) · Ranger Pete earned 6 shell in each of 5 rounds, plus 40 bonus shell. Then 15 shell were lost. How many shell are left? = 55 (R)

Clue 4 (Pythagorean theorem): "WE FOUND A GREEN THREAD ON THE BRANCH"

legs 35 and 120, hypotenuse = 125 (W) · legs 25 and 60, hypotenuse = 65 (H) · legs 60 and 63, hypotenuse = 87 (C) · legs 9 and 12, hypotenuse = 15 (U) · legs 20 and 48, hypotenuse = 52 (R) · legs 8 and 15, hypotenuse = 17 (E) · legs 24 and 32, hypotenuse = 40 (B) · legs 27 and 120, hypotenuse = 123 (G) · legs 15 and 20, hypotenuse = 25 (N) · legs 24 and 70, hypotenuse = 74 (O) · legs 12 and 35, hypotenuse = 37 (D) · legs 16 and 30, hypotenuse = 34 (A) · legs 6 and 8, hypotenuse = 10 (T) · legs 40 and 42, hypotenuse = 58 (F)

Clue 5 (Square roots): surviving statement is box 2 → Wyatt

$\sqrt{49} = 7$ · $\sqrt{121} = 11$ · $\sqrt{9} = 3$ · $\sqrt{16} = 4$ · $\sqrt{144} = 12$ · $\sqrt{100} = 10$ · $\sqrt{64} = 8$ · $\sqrt{25} = 5$ · $\sqrt{36} = 6$ · $\sqrt{1} = 1$ · $\sqrt{81} = 9$