



The Case of the Swapped Star Tiara

Grade 3 math · Multiplication, Rounding, Addition, Subtraction, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone snuck into the Royal Tiara Academy and swapped the priceless Golden Star Tiara with a cheap plastic toy! The Royal Crown Keeper needs your help to follow the math clues, find the Imposter Princess, and save the royal graduation ceremony.

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 Imposter Princess is _____

Possible suspects

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

NAME	SIGNATURE CHARM	MAGIC PROP	WRITING HAND	TIARA HAIR STYLE	ROYAL ALLERGY
Belle	Rainbow Dance	Emerald Ring	Left-handed writer	Long Braids	Silver Rose petals
Elsa	Jewel Glow	Pearl Necklace	Left-handed writer	Curly Ponytail	Midnight Tulip scent
Megara	Sparkle Whisper	Pearl Necklace	Left-handed writer	Long Braids	Silver Rose petals
Elena	Rainbow Dance	Pearl Necklace	Left-handed writer	Long Braids	Silver Rose petals
Pocahontas	Jewel Glow	Pearl Necklace	Right-handed writer	High Bun	Golden Apple pollen
Jasmine	Jewel Glow	Ribbon Scepter	Left-handed writer	Long Braids	Silver Rose petals
Tiana	Sparkle Whisper	Pearl Necklace	Left-handed writer	Curly Ponytail	Golden Apple pollen
Giselle	Jewel Glow	Star Wand	Right-handed writer	High Bun	Midnight Tulip scent
Anastasia	Sparkle Whisper	Star Wand	Left-handed writer	Curly Ponytail	Silver Rose petals
Moana	Glimmer Song	Emerald Ring	Right-handed writer	Curly Ponytail	Midnight Tulip scent
Charlotte	Sparkle Whisper	Crystal Slipper	Left-handed writer	Long Braids	Golden Apple pollen
Rapunzel	Jewel Glow	Crystal Slipper	Left-handed writer	Curly Ponytail	Midnight Tulip scent
Mulan	Jewel Glow	Star Wand	Right-handed writer	Long Braids	Silver Rose petals
Merida	Rainbow Dance	Ribbon Scepter	Right-handed writer	Long Braids	Golden Apple pollen
Odette	Sparkle Whisper	Ribbon Scepter	Right-handed writer	High Bun	Midnight Tulip scent
Snow White	Sparkle Whisper	Emerald Ring	Left-handed writer	Long Braids	Silver Rose petals
Ariel	Butterfly Breeze	Pearl Necklace	Right-handed writer	High Bun	Midnight Tulip scent
Sofia	Rainbow Dance	Star Wand	Left-handed writer	Curly Ponytail	Golden Apple pollen
Kida	Jewel Glow	Pearl Necklace	Right-handed writer	High Bun	Silver Rose petals
Cinderella	Rainbow Dance	Crystal Slipper	Left-handed writer	High Bun	Golden Apple pollen
Anna	Jewel Glow	Ribbon Scepter	Left-handed writer	Curly Ponytail	Midnight Tulip scent

Multiplication facts (1-12)

We found rows of sparkling gems dropped on the dance floor. If we count them in equal groups, we can find the first clue.

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

120 9 100 20 66 108 108 55 66 60 2 81 100 14 60 81 120

35 14 100 55 10 66 16 16 81 60 14 11 100 70 120 100 10

$$10 \times 12 = \boxed{} \rightarrow \boxed{\text{T}}$$

$12 \times 9 = \boxed{} \rightarrow \boxed{\text{L}}$

$$6 \times 10 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$4 \times 5 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$10 \times 10 = \boxed{} \rightarrow \boxed{\text{E}}$

$1 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{D}}$

$3 \times 3 = \boxed{} \rightarrow \boxed{\text{H}}$

$$11 \times 1 = \boxed{} \rightarrow \boxed{\text{C}}$$

$7 \times 10 = \boxed{} \rightarrow \boxed{\text{P}}$

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

$2 \times 7 = \square \rightarrow \boxed{\mathbf{S}}$

$$6 \times 11 = \boxed{} \rightarrow \boxed{1}$$

$$5 \times 2 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$5 \times 7 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$5 \times 11 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$8 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{B}}$

Scratch space:

CLUE 2

The royal scale showed the weight of the fake tiara. Let's round the scale's number to the nearest ten to reveal the next clue.

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

Round 704 to the nearest hundred $\rightarrow$ **T**

Round 34 to the nearest ten $\rightarrow$ **H**

Round 305 to the nearest hundred → **D**

Round 4,107 to the nearest thousand $\rightarrow$ **R**

Round 2,872 to the nearest thousand → **A**

Round 8,514 to the nearest thousand → **U**

Round 8,471 to the nearest thousand → **F**

Round 1,813 to the nearest thousand $\rightarrow$ **N**

Round 56 to the nearest ten $\rightarrow$

Round 92 to the nearest ten → **E**

Round 215 to the nearest hundred $\rightarrow$ **P**

Round 380 to the nearest hundred $\rightarrow$ **L**

Round 4,746 to the nearest thousand → **C**

Round 46 to the nearest ten → **W**

Round 895 to the nearest hundred → **S**

Scratch space:

CLUE 3

Addition

The palace guards are tallying up the missing glitter bottles. Let's add them all together to unlock another clue.

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

T																
649	634	942	743	206	363	868	544	644	649	271	758	942	942	820	942	271
758	942	767	544	271	644	363	226	942	544	544	574	271	942	271		

$447 + 202 = \square \rightarrow \boxed{\text{T}}$

$461 + 282 = \square \rightarrow \boxed{\text{C}}$

$363 + 395 = \square \rightarrow \boxed{\text{N}}$

$170 + 193 = \square \rightarrow \boxed{\text{L}}$

$151 + 75 = \square \rightarrow \boxed{\text{V}}$

$298 + 276 = \square \rightarrow \boxed{\text{O}}$

$441 + 427 = \square \rightarrow \boxed{\text{P}}$

$331 + 611 = \square \rightarrow \boxed{\text{E}}$

$61 + 145 = \square \rightarrow \boxed{\text{U}}$

$353 + 414 = \square \rightarrow \boxed{\text{A}}$

$339 + 295 = \square \rightarrow \boxed{\text{H}}$

$262 + 382 = \square \rightarrow \boxed{\text{I}}$

$189 + 355 = \square \rightarrow \boxed{\text{R}}$

$144 + 127 = \square \rightarrow \boxed{\text{S}}$

$406 + 414 = \square \rightarrow \boxed{\text{Z}}$

Scratch space:

CLUE 4 Subtraction

The imposter took some shiny ribbons from the craft room. If we subtract the leftover ribbons, we will find a new clue.

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

W															
215	894	286	103	364	851	853	158	789	490	224	112	714	224	861	490
286	490	103	797	134	103	851	309	895	490	224	861	853	158		

$383 - 168 = \square \rightarrow \boxed{W}$

$593 - 369 = \square \rightarrow \boxed{A}$

$350 - 216 = \square \rightarrow \boxed{L}$

$943 - 146 = \square \rightarrow \boxed{M}$

$1145 - 356 = \square \rightarrow \boxed{T}$

$236 - 133 = \square \rightarrow \boxed{O}$

$532 - 168 = \square \rightarrow \boxed{U}$

$1186 - 292 = \square \rightarrow \boxed{E}$

$1244 - 383 = \square \rightarrow \boxed{I}$

$239 - 81 = \square \rightarrow \boxed{S}$

$958 - 105 = \square \rightarrow \boxed{D}$

$279 - 167 = \square \rightarrow \boxed{Y}$

$941 - 90 = \square \rightarrow \boxed{N}$

$509 - 19 = \square \rightarrow \boxed{R}$

$691 - 382 = \square \rightarrow \boxed{G}$

$670 - 384 = \square \rightarrow \boxed{F}$

$1167 - 272 = \square \rightarrow \boxed{B}$

$1083 - 369 = \square \rightarrow \boxed{H}$

Scratch space:

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

The maids are splitting the magical tiara boxes into equal piles. Dividing them evenly will show us the final 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:

$120 \div 10 = \boxed{}$

$72 \div 9 = \boxed{}$

$18 \div 9 = \boxed{}$

$4 \div 4 = \boxed{}$

$22 \div 2 = \boxed{}$

$30 \div 10 = \boxed{}$

$42 \div 7 = \boxed{}$

$49 \div 7 = \boxed{}$

$40 \div 10 = \boxed{}$

$100 \div 10 = \boxed{}$

$15 \div 3 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain performs a rainbow dance to distract everyone, then taps a crystal slipper to teleport away.
2. The villain uses a sparkle whisper to confuse the guards, then points an emerald ring to unlock the secret door.
3. The villain creates a bright jewel glow to block the cameras, then waves a star wand to make a quick escape.
4. The villain performs a rainbow dance to distract everyone, then swings a ribbon scepter to create a smoke screen.
5. The villain uses a sparkle whisper to confuse the guards, then swings a ribbon scepter to create a smoke screen.
6. The villain performs a rainbow dance to distract everyone, then waves a star wand to make a quick escape.
7. The villain sings a beautiful glimmer song to charm the staff, then flashes a pearl necklace to blind the onlookers.
8. The villain performs a rainbow dance to distract everyone, then flashes a pearl necklace to blind the onlookers.
9. The villain performs a rainbow dance to distract everyone, then points an emerald ring to unlock the secret door.
10. The villain summons a butterfly breeze to sweep across the room, then taps a crystal slipper to teleport away.
11. The villain creates a bright jewel glow to block the cameras, then taps a crystal slipper to teleport away.
12. The villain uses a sparkle whisper to confuse the guards, then flashes a pearl necklace to blind the onlookers.

Answer Key

The Case of the Swapped Star Tiara

Culprit: Belle

Rainbow Dance · Emerald Ring · Left-handed writer · Long Braids · Silver Rose petals

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE A RIBBON SCEPTER"

$10 \times 12 = 120$ (T) · $12 \times 9 = 108$ (L) · $6 \times 10 = 60$ (N) · $4 \times 5 = 20$ (V) · $10 \times 10 = 100$ (E) · $1 \times 2 = 2$ (D) · $3 \times 3 = 9$ (H) · $11 \times 1 = 11$ (C) · $7 \times 10 = 70$ (P) · $9 \times 9 = 81$ (O) · $2 \times 7 = 14$ (S) · $6 \times 11 = 66$ (I) · $5 \times 2 = 10$ (R) · $5 \times 7 = 35$ (U) · $5 \times 11 = 55$ (A) · $8 \times 2 = 16$ (B)

Clue 2 (Rounding): "THE SUSPECT WRITES WITH THEIR LEFT HAND"

Round 704 to the nearest hundred = 700 (T) · Round 34 to the nearest ten = 30 (H) · Round 305 to the nearest hundred = 300 (D) · Round 4,107 to the nearest thousand = 4000 (R) · Round 2,872 to the nearest thousand = 3000 (A) · Round 8,514 to the nearest thousand = 9000 (U) · Round 8,471 to the nearest thousand = 8000 (F) · Round 1,813 to the nearest thousand = 2000 (N) · Round 56 to the nearest ten = 60 (I) · Round 92 to the nearest ten = 90 (E) · Round 215 to the nearest hundred = 200 (P) · Round 380 to the nearest hundred = 400 (L) · Round 4,746 to the nearest thousand = 5000 (C) · Round 46 to the nearest ten = 50 (W) · Round 895 to the nearest hundred = 900 (S)

Clue 3 (Addition): "THE CULPRIT SNEEZES NEAR SILVER ROSES"

$447 + 202 = 649$ (T) · $461 + 282 = 743$ (C) · $363 + 395 = 758$ (N) · $170 + 193 = 363$ (L) · $151 + 75 = 226$ (V) · $298 + 276 = 574$ (O) · $441 + 427 = 868$ (P) · $331 + 611 = 942$ (E) · $61 + 145 = 206$ (U) · $353 + 414 = 767$ (A) · $339 + 295 = 634$ (H) · $262 + 382 = 644$ (I) · $189 + 355 = 544$ (R) · $144 + 127 = 271$ (S) · $406 + 414 = 820$ (Z)

Clue 4 (Subtraction): "WE FOUND STRAY HAIR FROM LONG BRAIDS"

$383 - 168 = 215$ (W) · $593 - 369 = 224$ (A) · $350 - 216 = 134$ (L) · $943 - 146 = 797$ (M) · $1145 - 356 = 789$ (T) · $236 - 133 = 103$ (O) · $532 - 168 = 364$ (U) · $1186 - 292 = 894$ (E) · $1244 - 383 = 861$ (I) · $239 - 81 = 158$ (S) · $958 - 105 = 853$ (D) · $279 - 167 = 112$ (Y) · $941 - 90 = 851$ (N) · $509 - 19 = 490$ (R) · $691 - 382 = 309$ (G) · $670 - 384 = 286$ (F) · $1167 - 272 = 895$ (B) · $1083 - 369 = 714$ (H)

Clue 5 (Division facts (1-12)): surviving statement is box 9 → Belle

$120 \div 10 = 12$ · $72 \div 9 = 8$ · $18 \div 9 = 2$ · $4 \div 4 = 1$ · $22 \div 2 = 11$ · $30 \div 10 = 3$ · $42 \div 7 = 6$ · $49 \div 7 = 7$ · $40 \div 10 = 4$ · $100 \div 10 = 10$ · $15 \div 3 = 5$