



The Mystery of the Sparkling Tiara

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

Detective: _____ **Date:** _____

Someone has snuck into the royal vault and taken the Golden Tiara! Princess Elizabeth and Princess Julia have gathered the Royal Guard to solve this royal mystery. A rogue princess is behind this, and we must find out who did it.

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 Rogue 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 SPELL	ROYAL COMPANION	WRITING HAND	CROWN HAIR STYLE	FAVORITE TREAT
Princess Eugenie	sparkle beam	golden dragon	writes right handed	long curls	strawberry tart
Princess Grace	songbird whisper	unicorn helper	writes left handed	long curls	lemon drop
Princess Isabella	levitating dance	fluffy bunny	writes right handed	braided crown	lemon drop
Princess Elizabeth	flooding tea	unicorn helper	writes left handed	high ponytail	strawberry tart
Princess Leonor	glitter breeze	golden dragon	writes left handed	braided crown	lemon drop
Princess Marie	sparkle beam	unicorn helper	writes left handed	long curls	strawberry tart
Princess Ingrid	flooding tea	swan companion	writes right handed	long curls	lemon drop
Princess Estelle	flooding tea	unicorn helper	writes left handed	braided crown	lemon drop
Princess Athena	songbird whisper	golden dragon	writes left handed	long curls	strawberry tart
Princess Astrid	glitter breeze	unicorn helper	writes left handed	braided crown	lemon drop
Princess Amalia	songbird whisper	fluffy bunny	writes right handed	long curls	mint chocolate
Princess Josephine	levitating dance	golden dragon	writes right handed	braided crown	mint chocolate
Princess Victoria	glitter breeze	swan companion	writes right handed	high ponytail	strawberry tart
Princess Diana	levitating dance	swan companion	writes left handed	high ponytail	lemon drop
Princess Beatrice	songbird whisper	fluffy bunny	writes right handed	braided crown	mint chocolate
Princess Anne	sparkle beam	fluffy bunny	writes left handed	braided crown	mint chocolate
Princess Mary	songbird whisper	golden dragon	writes right handed	long curls	strawberry tart
Princess Margaret	sparkle beam	fluffy bunny	writes left handed	braided crown	lemon drop
Princess Martha	songbird whisper	royal puppy	writes right handed	long curls	strawberry tart
Princess Alexandra	songbird whisper	royal puppy	writes right handed	high ponytail	strawberry tart
Princess Charlotte	flooding tea	royal puppy	writes left handed	braided crown	lemon drop

CLUE 1
Multiplication facts (1-12)

Princess Elizabeth inspects the royal banquet hall. The tables are set in neat rows. To find out how many tea cups were used, she multiplies the number of rows by the cups in each row. The total number gives her the first clue.

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

T			T											T				
40	110	144	40	110	8	144	100	48	11	144	3	33	11	40	44	8	48	144
15	70	11	63	48	144	33	48	44	15	70	11	33						

$5 \times 8 = \square \rightarrow \boxed{\text{T}}$

$4 \times 11 = \square \rightarrow \boxed{\text{R}}$

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

$12 \times 12 = \square \rightarrow \boxed{\text{E}}$

$5 \times 3 = \square \rightarrow \boxed{\text{A}}$

$1 \times 11 = \square \rightarrow \boxed{\text{O}}$

$10 \times 10 = \square \rightarrow \boxed{\text{F}}$

$6 \times 8 = \square \rightarrow \boxed{\text{D}}$

$1 \times 3 = \square \rightarrow \boxed{\text{S}}$

$10 \times 11 = \square \rightarrow \boxed{\text{H}}$

$4 \times 2 = \square \rightarrow \boxed{\text{I}}$

$10 \times 7 = \square \rightarrow \boxed{\text{G}}$

$3 \times 11 = \square \rightarrow \boxed{\text{N}}$

Scratch space:

CLUE 2

Princess Julia checks the garden gate. The magical footprints are fading, so the tracker can only show a rounded number for the distance. Rounding the steps to the nearest ten reveals where the thief ran next.

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

Round 291 to the nearest ten $\rightarrow$ **T**

Round 1,867 to the nearest thousand $\rightarrow$

Round 2,909 to the nearest hundred $\rightarrow$ **F**

Round 3,369 to the nearest thousand → **E**

Round 71 to the nearest ten $\rightarrow$ **D**

Round 162 to the nearest hundred $\rightarrow$ **P**

Round 4,880 to the nearest thousand $\rightarrow$ **L**

Round 4,305 to the nearest hundred → **R**

Round 8,744 to the nearest thousand → **C**

Round 926 to the nearest hundred $\rightarrow$ **A**

Round 166 to the nearest ten $\rightarrow$ **S**

Round 1,287 to the nearest hundred $\rightarrow$ **H**

Round 51 to the nearest ten → **W**

Round 1,700 to the nearest hundred $\rightarrow$ **U**

Round 130 to the nearest ten → **N**

Scratch space:

CLUE 3 Addition

The royal guards count the sparkly gems left behind in the courtyard. They add the diamonds from the grass to the rubies by the fountain. The grand total of these added jewels unlocks a shiny clue box.

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

W											W			
7079	8343	6142	2782	3856	9503	8343	8972	5148	8343	3472	3856	7079	3856	2252
8855	6142	9509	7809	9724	4968	8343	3472	6068	7809	4546	9503	6068	5321	6142

$2468 + 4611 = \square \rightarrow$ W	$3784 + 5071 = \square \rightarrow$ U	$5721 + 3788 = \square \rightarrow$ I
$3539 + 1782 = \square \rightarrow$ P	$1339 + 913 = \square \rightarrow$ Y	$1350 + 2122 = \square \rightarrow$ M
$1186 + 2670 = \square \rightarrow$ A	$3215 + 6288 = \square \rightarrow$ R	$5240 + 4484 = \square \rightarrow$ G
$4684 + 3659 = \square \rightarrow$ E	$3577 + 2565 = \square \rightarrow$ S	$3189 + 1959 = \square \rightarrow$ H
$1925 + 2621 = \square \rightarrow$ D	$2465 + 2503 = \square \rightarrow$ L	$1513 + 1269 = \square \rightarrow$ C
$2612 + 5197 = \square \rightarrow$ N	$3808 + 2260 = \square \rightarrow$ O	$4500 + 4472 = \square \rightarrow$ T

Scratch space:

CLUE 4
Subtraction

Princess Elizabeth checks the silver spoons. Several are missing from the chest. By subtracting the remaining spoons from the starting amount, she counts the theft and finds a secret note underneath.

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

T							T											
1001	1158	3350	4079	6083	3350	4576	1001	1199	4675	3148	6488	2485	2737	3148	6378	6378	6583	6488
4576	2737	6583	7793	1199	6378	2737	1199	3148	8117	3350	8117	8304	2737	6583	1878	6488		

$3016 - 2015 = \boxed{} \rightarrow \boxed{\text{T}}$

$6053 - 3568 = \boxed{} \rightarrow \boxed{\text{K}}$

$10601 - 4223 = \boxed{} \rightarrow \boxed{\text{B}}$

$6267 - 2917 = \boxed{} \rightarrow \boxed{\text{E}}$

$3593 - 856 = \boxed{} \rightarrow \boxed{\text{R}}$

$8131 - 3456 = \boxed{} \rightarrow \boxed{\text{P}}$

$5457 - 4299 = \boxed{} \rightarrow \boxed{\text{H}}$

$6936 - 3788 = \boxed{} \rightarrow \boxed{\text{I}}$

$7046 - 558 = \boxed{} \rightarrow \boxed{\text{N}}$

$12856 - 4739 = \boxed{} \rightarrow \boxed{\text{D}}$

$10780 - 4697 = \boxed{} \rightarrow \boxed{\text{L}}$

$12089 - 4296 = \boxed{} \rightarrow \boxed{\text{M}}$

$5749 - 1173 = \boxed{} \rightarrow \boxed{\text{F}}$

$10148 - 3565 = \boxed{} \rightarrow \boxed{\text{O}}$

$6575 - 2496 = \boxed{} \rightarrow \boxed{\text{Y}}$

$9712 - 1408 = \boxed{} \rightarrow \boxed{\text{C}}$

$2748 - 1549 = \boxed{} \rightarrow \boxed{\text{A}}$

$6746 - 4868 = \boxed{} \rightarrow \boxed{\text{W}}$

Scratch space:

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

Princess Julia shares the remaining sweet pastries equally among the castle helpers. Sharing the treats into even groups lets her divide the work and uncover the final clue hidden inside the pastry tray.

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:

$14 \div 2 = \boxed{}$

$32 \div 8 = \boxed{}$

$33 \div 11 = \boxed{}$

$15 \div 3 = \boxed{}$

$3 \div 3 = \boxed{}$

$10 \div 1 = \boxed{}$

$24 \div 2 = \boxed{}$

$132 \div 12 = \boxed{}$

$6 \div 3 = \boxed{}$

$96 \div 12 = \boxed{}$

$9 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain pours a flooding tea torrent, then escapes on a majestic swan companion.
2. The villain blasts a bright sparkle beam, then runs away with a royal puppy.
3. The villain pours a flooding tea torrent, then runs away with a royal puppy.
4. The villain blasts a bright sparkle beam, then hops off with a fluffy bunny.
5. The villain pours a flooding tea torrent, then hops off with a fluffy bunny.
6. The villain summons a swift glitter breeze, then rides away on a unicorn helper.
7. The villain pours a flooding tea torrent, then rides away on a unicorn helper.
8. The villain sings a soft songbird whisper, then rides away on a unicorn helper.
9. The villain sings a soft songbird whisper, then escapes on a majestic swan companion.
10. The villain spins in a levitating dance, then hops off with a fluffy bunny.
11. The villain sings a soft songbird whisper, then hops off with a fluffy bunny.
12. The villain summons a swift glitter breeze, then runs away with a royal puppy.

Answer Key

The Mystery of the Sparkling Tiara

Culprit: Princess Astrid

glitter breeze · unicorn helper · writes left handed · braided crown · lemon drop

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE THIEF DOES NOT RIDE A GOLDEN DRAGON"

$5 \times 8 = 40$ (T) · $4 \times 11 = 44$ (R) · $9 \times 7 = 63$ (L) · $12 \times 12 = 144$ (E) · $5 \times 3 = 15$ (A) · $1 \times 11 = 11$ (O) · $10 \times 10 = 100$ (F) · $6 \times 8 = 48$ (D) · $1 \times 3 = 3$ (S) · $10 \times 11 = 110$ (H) · $4 \times 2 = 8$ (I) · $10 \times 7 = 70$ (G) · $3 \times 11 = 33$ (N)

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

Round 291 to the nearest ten = 290 (T) · Round 1,867 to the nearest thousand = 2000 (I) · Round 2,909 to the nearest hundred = 2900 (F) · Round 3,369 to the nearest thousand = 3000 (E) · Round 71 to the nearest ten = 70 (D) · Round 162 to the nearest hundred = 200 (P) · Round 4,880 to the nearest thousand = 5000 (L) · Round 4,305 to the nearest hundred = 4300 (R) · Round 8,744 to the nearest thousand = 9000 (C) · Round 926 to the nearest hundred = 900 (A) · Round 166 to the nearest ten = 170 (S) · Round 1,287 to the nearest hundred = 1300 (H) · Round 51 to the nearest ten = 50 (W) · Round 1,700 to the nearest hundred = 1700 (U) · Round 130 to the nearest ten = 130 (N)

Clue 3 (Addition): "WE SCARE THEM AWAY USING LEMON DROPS"

$2468 + 4611 = 7079$ (W) · $3784 + 5071 = 8855$ (U) · $5721 + 3788 = 9509$ (I) · $3539 + 1782 = 5321$ (P) · $1339 + 913 = 2252$ (Y) · $1350 + 2122 = 3472$ (M) · $1186 + 2670 = 3856$ (A) · $3215 + 6288 = 9503$ (R) · $5240 + 4484 = 9724$ (G) · $4684 + 3659 = 8343$ (E) · $3577 + 2565 = 6142$ (S) · $3189 + 1959 = 5148$ (H) · $1925 + 2621 = 4546$ (D) · $2465 + 2503 = 4968$ (L) · $1513 + 1269 = 2782$ (C) · $2612 + 5197 = 7809$ (N) · $3808 + 2260 = 6068$ (O) · $4500 + 4472 = 8972$ (T)

Clue 4 (Subtraction): "THEY LEFT A PINK RIBBON FROM A BRAIDED CROWN"

$3016 - 2015 = 1001$ (T) · $6053 - 3568 = 2485$ (K) · $10601 - 4223 = 6378$ (B) · $6267 - 2917 = 3350$ (E) · $3593 - 856 = 2737$ (R) · $8131 - 3456 = 4675$ (P) · $5457 - 4299 = 1158$ (H) · $6936 - 3788 = 3148$ (I) · $7046 - 558 = 6488$ (N) · $12856 - 4739 = 8117$ (D) · $10780 - 4697 = 6083$ (L) · $12089 - 4296 = 7793$ (M) · $5749 - 1173 = 4576$ (F) · $10148 - 3565 = 6583$ (O) · $6575 - 2496 = 4079$ (Y) · $9712 - 1408 = 8304$ (C) · $2748 - 1549 = 1199$ (A) · $6746 - 4868 = 1878$ (W)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Princess Astrid

$14 \div 2 = 7$ · $32 \div 8 = 4$ · $33 \div 11 = 3$ · $15 \div 3 = 5$ · $3 \div 3 = 1$ · $10 \div 1 = 10$ · $24 \div 2 = 12$ · $132 \div 12 = 11$ · $6 \div 3 = 2$ · $96 \div 12 = 8$ · $9 \div 1 = 9$