The Great Golden Yarn Mystery

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone has stolen the Golden Ball of Yarn right out of the Royal Yarn Keeper's hands! The Rainbow Forest is in a panic, and we need the Whisker Patrol to solve this mystery.

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 glitter snatcher is _____

Possible suspects

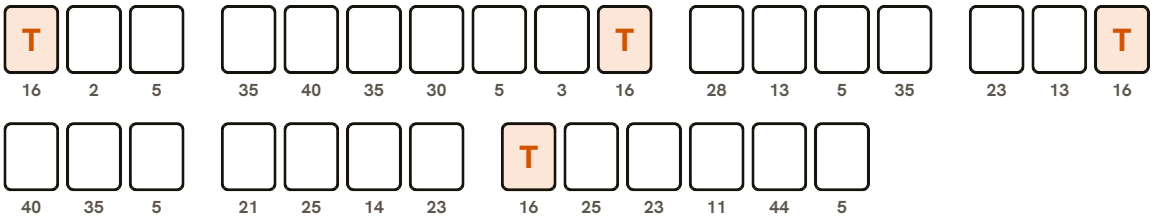
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY MAGIC	SECONDARY MAGIC	EYE WEAR	MANE COLOR	GREATEST FEAR
Jasper Jewel	sparkle shield	glitter blast	wears no glasses	pink mane	crinkly paper
Mittens Magic	super high jump	glitter blast	wears no glasses	pink mane	crinkly paper
Starlight Stella	star teleportation	bubble float	wears pink glasses	pink mane	crinkly paper
Ziggy Rainbow	sparkle shield	neon glow	wears pink glasses	silver mane	laser pointer
Shadow Shimmer	mega purr vibration	neon glow	wears no glasses	silver mane	laser pointer
Cleo Cloud	sparkle shield	glitter blast	wears no glasses	pink mane	laser pointer
Peanut Paws	rainbow laser beam	bubble float	wears no glasses	pink mane	spray bottle
Luna Sparkles	mega purr vibration	cloud dash	wears pink glasses	rainbow mane	spray bottle
Felix Feather	mega purr vibration	cloud dash	wears pink glasses	rainbow mane	crinkly paper
Whisker Wizard	rainbow laser beam	yarn tangle	wears no glasses	rainbow mane	laser pointer
Coco Cotton	star teleportation	glitter blast	wears pink glasses	silver mane	crinkly paper
Daisy Dream	star teleportation	cloud dash	wears no glasses	rainbow mane	laser pointer
Toby Twinkle	sparkle shield	bubble float	wears no glasses	silver mane	crinkly paper
Gizmo Glitter	rainbow laser beam	yarn tangle	wears no glasses	pink mane	crinkly paper
Simon Silvers	sparkle shield	cloud dash	wears pink glasses	silver mane	crinkly paper
Princess Purr	super high jump	neon glow	wears no glasses	pink mane	spray bottle
Bubbles McMeow	mega purr vibration	bubble float	wears no glasses	pink mane	crinkly paper
Bella Bowtie	rainbow laser beam	neon glow	wears pink glasses	rainbow mane	crinkly paper
Barnaby Boots	star teleportation	bubble float	wears no glasses	pink mane	crinkly paper
Sassy Stardust	star teleportation	neon glow	wears no glasses	pink mane	laser pointer
Professor Meow	super high jump	cloud dash	wears no glasses	silver mane	crinkly paper

CLUE 1 Percentages

> The castle security system runs on star crystals. The magic crystals lost a percentage of their charge during the heist. Solve the percentages to boot up the system and get our first clue.

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



20% of 80 = ☐ → T

50% of 28 = ☐ → R

10% of 350 = ☐ → S

25% of 44 = ☐ → G

10% of 250 = ☐ → A

20% of 200 = ☐ → U

5% of 100 = ☐ → E

10% of 280 = ☐ → D

75% of 28 = ☐ → Y

20% of 220 = ☐ → L

10% of 230 = ☐ → N

10% of 300 = ☐ → P

10% of 130 = ☐ → O

40% of 5 = ☐ → H

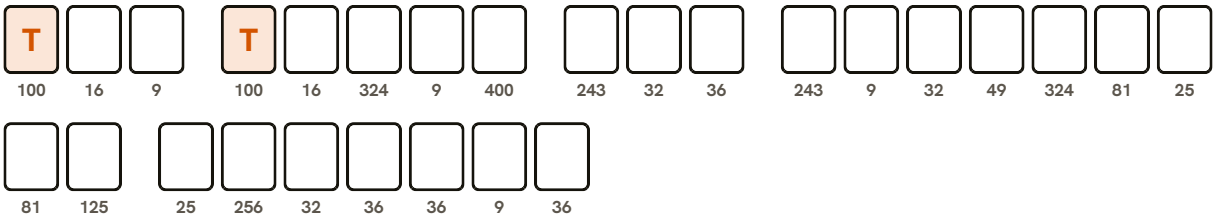
75% of 4 = ☐ → C

Scratch space:

CLUE 2 Exponents

> The thief left a trail of magical copycat clones behind. The number of clones grows fast using exponents. Calculate the total clones to find which path the suspect took.

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



10^2 = ☐ → T

20^2 = ☐ → F

7^2 = ☐ → R

16^2 = ☐ → L

3^5 = ☐ → W

4^2 = ☐ → H

6^2 = ☐ → S

9^2 = ☐ → N

3^2 = ☐ → E

5^3 = ☐ → O

2^5 = ☐ → A

5^2 = ☐ → G

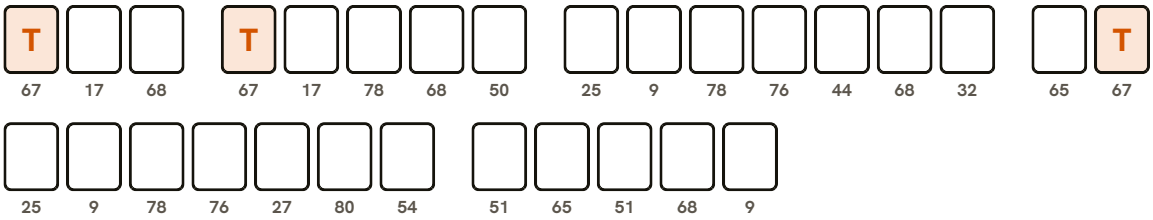
18^2 = ☐ → I

Scratch space:

CLUE 3 Order of operations

> To open the magic evidence safe we must press the colorful buttons in the correct order. Solve this order of operations puzzle to unlock the box.

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



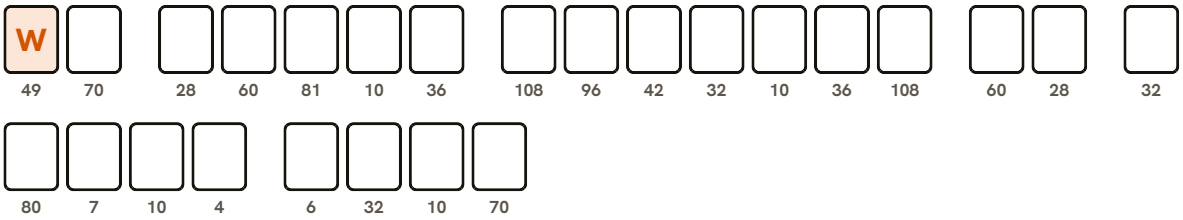
12 × 6 - 5 = ☐ → T	8 × 9 - 28 = ☐ → G	4 × 8 - 7 = ☐ → C
10 × 8 - 26 = ☐ → Y	3 × 7 - 4 = ☐ → H	26 + 7 × 6 = ☐ → E
40 + 6 × 6 = ☐ → N	30 + 5 × 7 = ☐ → A	10 × 8 - 29 = ☐ → P
35 + 5 × 9 = ☐ → L	5 + 2 × 2 = ☐ → R	29 + 3 × 7 = ☐ → F
23 + 3 × 3 = ☐ → D	7 × 4 - 1 = ☐ → K	68 + 5 × 2 = ☐ → I

Scratch space:

CLUE 4 Multiplication facts (1-12)

> The guards found rows of spilled glitter cupcakes on the floor near the kitchen. Count the total cakes by multiplying the rows and columns to find the next clue.

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



7 × 7 = ☐ → **W**

1 × 4 = ☐ → **K**

7 × 6 = ☐ → **R**

8 × 12 = ☐ → **T**

10 × 1 = ☐ → **N**

6 × 10 = ☐ → **O**

9 × 9 = ☐ → **U**

10 × 8 = ☐ → **P**

4 × 9 = ☐ → **D**

7 × 10 = ☐ → **E**

7 × 1 = ☐ → **I**

1 × 6 = ☐ → **M**

4 × 7 = ☐ → **F**

9 × 12 = ☐ → **S**

8 × 4 = ☐ → **A**

Scratch space:

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

> We need to share the delicious catnip treats fairly among our helper kittens. Divide the treats up to get the final clue from the kittens.

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:

10 ÷ 1 = ☐	5 ÷ 1 = ☐	70 ÷ 10 = ☐	72 ÷ 8 = ☐	18 ÷ 6 = ☐
108 ÷ 9 = ☐	7 ÷ 7 = ☐	54 ÷ 9 = ☐	44 ÷ 4 = ☐	16 ÷ 4 = ☐
96 ÷ 12 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain warps through space using star teleportation, then escapes in a sudden glitter blast.
2. The villain leaps over the palace wall with a super high jump, then escapes in a sudden glitter blast.
3. The villain blasts a path with a rainbow laser beam, then escapes in a sudden glitter blast.
4. The villain shakes the gates with a mega purr vibration, then zooms into the sky with a cloud dash.
5. The villain warps through space using star teleportation, then drifts away on a soft bubble float.
6. The villain blasts a path with a rainbow laser beam, then blocks the hallway with a yarn tangle.
7. The villain shakes the gates with a mega purr vibration, then drifts away on a soft bubble float.
8. The villain blocks the guards using a sparkle shield, then blinds the security cameras with a neon glow.
9. The villain blasts a path with a rainbow laser beam, then blinds the security cameras with a neon glow.
10. The villain blocks the guards using a sparkle shield, then escapes in a sudden glitter blast.
11. The villain shakes the gates with a mega purr vibration, then blocks the hallway with a yarn tangle.
12. The villain warps through space using star teleportation, then blocks the hallway with a yarn tangle.

TEACHER / PARENT

Answer Key

The Great Golden Yarn Mystery

Culprit: Mittens Magic

super high jump · glitter blast · wears no glasses · pink mane · crinkly paper

Trail: Start 21 → Clue 1 19 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE SUSPECT DOES NOT USE YARN TANGLE"

20% of 80 = 16 (T) · 50% of 28 = 14 (R) · 10% of 350 = 35 (S) · 25% of 44 = 11 (G) · 10% of 250 = 25 (A) · 20% of 200 = 40 (U) · 5% of 100 = 5 (E) · 10% of 280 = 28 (D) · 75% of 28 = 21 (Y) · 20% of 220 = 44 (L) · 10% of 230 = 23 (N) · 10% of 300 = 30 (P) · 10% of 130 = 13 (O) · 40% of 5 = 2 (H) · 75% of 4 = 3 (C)

Clue 2 (Exponents): "THE THIEF WAS WEARING NO GLASSES"

10^2 = 100 (T) · 20^2 = 400 (F) · 7^2 = 49 (R) · 16^2 = 256 (L) · 3^5 = 243 (W) · 4^2 = 16 (H) · 6^2 = 36 (S) · 9^2 = 81 (N) · 3^2 = 9 (E) · 5^3 = 125 (O) · 2^5 = 32 (A) · 5^2 = 25 (G) · 18^2 = 324 (I)

Clue 3 (Order of operations): "THE THIEF CRINGED AT CRINKLY PAPER"

12 × 6 - 5 = 67 (T) · 8 × 9 - 28 = 44 (G) · 4 × 8 - 7 = 25 (C) · 10 × 8 - 26 = 54 (Y) · 3 × 7 - 4 = 17 (H) · 26 + 7 × 6 = 68 (E) · 40 + 6 × 6 = 76 (N) · 30 + 5 × 7 = 65 (A) · 10 × 8 - 29 = 51 (P) · 35 + 5 × 9 = 80 (L) · 5 + 2 × 2 = 9 (R) · 29 + 3 × 7 = 50 (F) · 23 + 3 × 3 = 32 (D) · 7 × 4 - 1 = 27 (K) · 68 + 5 × 2 = 78 (I)

Clue 4 (Multiplication facts (1-12)): "WE FOUND STRANDS OF A PINK MANE"

7 × 7 = 49 (W) · 1 × 4 = 4 (K) · 7 × 6 = 42 (R) · 8 × 12 = 96 (T) · 10 × 1 = 10 (N) · 6 × 10 = 60 (O) · 9 × 9 = 81 (U) · 10 × 8 = 80 (P) · 4 × 9 = 36 (D) · 7 × 10 = 70 (E) · 7 × 1 = 7 (I) · 1 × 6 = 6 (M) · 4 × 7 = 28 (F) · 9 × 12 = 108 (S) · 8 × 4 = 32 (A)

Clue 5 (Division facts (1-12)): surviving statement is box 2 → Mittens Magic

10 ÷ 1 = 10 · 5 ÷ 1 = 5 · 70 ÷ 10 = 7 · 72 ÷ 8 = 9 · 18 ÷ 6 = 3 · 108 ÷ 9 = 12 · 7 ÷ 7 = 1 · 54 ÷ 9 = 6 · 44 ÷ 4 = 11 · 16 ÷ 4 = 4 · 96 ÷ 12 = 8