The Mystery of the Missing Prism Crystal

Grade 7 math · Addition, Subtraction, Multiplication, Integers, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The enchanted Prism Crystal has been swiped right before the annual Star Glow Festival! Detective Pawlock needs your math skills to examine the evidence, rule out suspects, and find the real culprit.

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 caticorn sneaky-paw is _____

Possible suspects

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

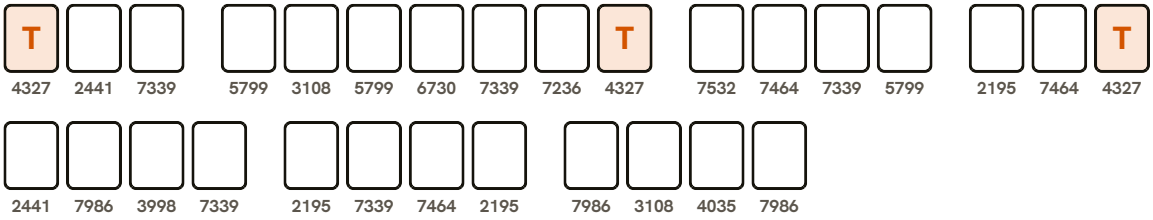
NAME	MAGIC SPELL	AURA	STANCE	MANE COLOR	FEARS
Oliver Oatcake	Star Dust	Silver Glow	Left Paws First	Pastel Pink Mane	Squeaky Toys
Stella Sparkle	Rainbow Sparkles	Golden Shimmer	Right Paws First	Lavender Mane	Laser Pointers
Milo Moonbeam	Glow Whiskers	Silver Glow	Left Paws First	Sky Blue Mane	Catnip Bubbles
Leo Starling	Starlight Beam	Golden Shimmer	Left Paws First	Pastel Pink Mane	Catnip Bubbles
Tessa Velvet	Glow Whiskers	Cosmic Shine	Right Paws First	Pastel Pink Mane	Squeaky Toys
Hazel Hoof	Glow Whiskers	Cosmic Shine	Left Paws First	Lavender Mane	Catnip Bubbles
Winston Whinny	Glow Whiskers	Neon Aura	Left Paws First	Pastel Pink Mane	Squeaky Toys
Penelope Pounce	Star Dust	Silver Glow	Right Paws First	Sky Blue Mane	Squeaky Toys
Jasper Jellybean	Star Dust	Crystal Sparkle	Right Paws First	Lavender Mane	Squeaky Toys
Sam Sassafras	Rainbow Sparkles	Silver Glow	Left Paws First	Sky Blue Mane	Catnip Bubbles
Willow Whisker	Starlight Beam	Cosmic Shine	Left Paws First	Lavender Mane	Catnip Bubbles
Luna Lightpaw	Starlight Beam	Cosmic Shine	Right Paws First	Sky Blue Mane	Laser Pointers
Rosie Rainbow	Prism Shield	Crystal Sparkle	Left Paws First	Sky Blue Mane	Laser Pointers
Piper Prism	Glow Whiskers	Crystal Sparkle	Left Paws First	Pastel Pink Mane	Squeaky Toys
Toby Twinkle	Starlight Beam	Cosmic Shine	Left Paws First	Pastel Pink Mane	Squeaky Toys
Charlie Glitter	Starlight Beam	Neon Aura	Left Paws First	Sky Blue Mane	Laser Pointers
Zoe Zigzag	Rainbow Sparkles	Golden Shimmer	Right Paws First	Pastel Pink Mane	Squeaky Toys
Daisy Dazzle	Glow Whiskers	Cosmic Shine	Left Paws First	Lavender Mane	Squeaky Toys
Maya Meadows	Starlight Beam	Cosmic Shine	Left Paws First	Pastel Pink Mane	Laser Pointers
Cleo Cloudtail	Prism Shield	Cosmic Shine	Right Paws First	Lavender Mane	Squeaky Toys
Felix Frosthorn	Glow Whiskers	Golden Shimmer	Left Paws First	Pastel Pink Mane	Squeaky Toys

make your own at mathcrackers.com

CLUE 1 Addition

We totaled up the glitter tracks left in the main hallway to double check the magical aura.

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



1893 + 2434 = ☐ → T

2739 + 4793 = ☐ → D

2966 + 2833 = ☐ → S

3025 + 3705 = ☐ → P

2627 + 1371 = ☐ → V

3260 + 4079 = ☐ → E

2936 + 4300 = ☐ → C

827 + 1368 = ☐ → N

2148 + 1887 = ☐ → R

1471 + 970 = ☐ → H

3112 + 4352 = ☐ → O

5332 + 2654 = ☐ → A

1453 + 1655 = ☐ → U

Scratch space:

CLUE 2 Subtraction

By subtracting the broken star gems from the inventory list, we found a secret message.

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



5430 - 1298 = ☐ → T

9230 - 1864 = ☐ → E

4333 - 58 = ☐ → F

9513 - 3735 = ☐ → A

9661 - 1768 = ☐ → U

8542 - 1973 = ☐ → W

7251 - 1352 = ☐ → D

5641 - 3134 = ☐ → C

7584 - 732 = ☐ → R

5707 - 1605 = ☐ → L

3164 - 205 = ☐ → S

7352 - 429 = ☐ → H

6164 - 4807 = ☐ → P

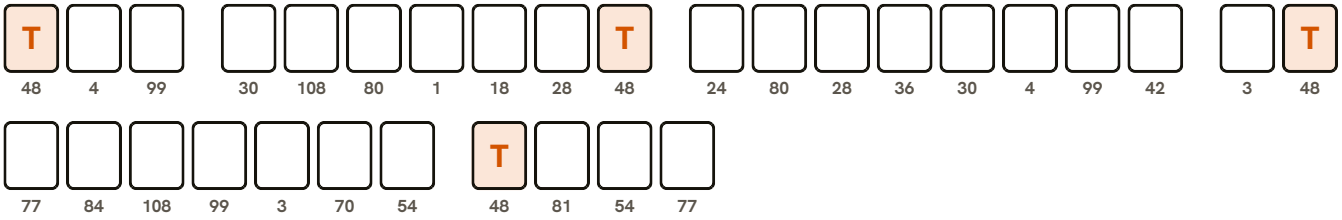
6050 - 1826 = ☐ → I

Scratch space:

CLUE 3 Multiplication facts (1-12)

> Grouping the spell wands into even rows helped us spot footprint marks left by their stance.

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



12 × 4 = ☐ → T

7 × 4 = ☐ → I

7 × 12 = ☐ → Q

1 × 3 = ☐ → A

1 × 1 = ☐ → P

4 × 1 = ☐ → H

7 × 11 = ☐ → S

8 × 10 = ☐ → L

6 × 7 = ☐ → D

10 × 7 = ☐ → K

12 × 3 = ☐ → N

6 × 5 = ☐ → C

9 × 11 = ☐ → E

9 × 6 = ☐ → Y

12 × 9 = ☐ → U

3 × 6 = ☐ → R

3 × 8 = ☐ → F

9 × 9 = ☐ → O

Scratch space:

CLUE 4 Integers

Calculating the elevation changes up the crystal tower revealed a stray mane fiber.

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

P						P													
5	13	12	10	11	16	5	8	4	15	27	13	4	11	18	2	1			

6	13	12	16	11	18	10	28	11	24	8	4	26

(-8) + 13 = ☐ → P

(-6) + 7 = ☐ → R

3 - (-7) = ☐ → T

2 - (-4) = ☐ → W

11 - (-1) = ☐ → S

(-14) + 18 = ☐ → N

(-5) + 33 = ☐ → B

17 - (-1) = ☐ → F

11 - (-13) = ☐ → H

(-6) + 32 = ☐ → D

(-4) + 20 = ☐ → L

19 - (-8) = ☐ → M

(-14) + 25 = ☐ → E

(-6) + 21 = ☐ → K

(-9) + 17 = ☐ → I

(-15) + 28 = ☐ → A

(-8) + 10 = ☐ → U

Scratch space:

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

Dividing the catnip treats among the guard team brought out a key clue about a weakness.

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:

60 ÷ 6 = ☐ | 30 ÷ 10 = ☐ | 11 ÷ 11 = ☐ | 33 ÷ 3 = ☐ | 54 ÷ 9 = ☐

8 ÷ 2 = ☐ | 20 ÷ 4 = ☐ | 45 ÷ 5 = ☐ | 24 ÷ 3 = ☐ | 6 ÷ 3 = ☐

24 ÷ 2 = ☐

Step 2 - cross out the sentence with each answer:

1. The villain scattered star dust, then shone with silver glow.
2. The villain shot a starlight beam, then radiated neon aura.
3. The villain flashed glow whiskers, then beamed with crystal sparkle.
4. The villain scattered star dust, then beamed with crystal sparkle.
5. The villain flashed glow whiskers, then shone with silver glow.
6. The villain raised a prism shield, then radiated neon aura.
7. The villain shot a starlight beam, then sparkled with cosmic shine.
8. The villain scattered star dust, then radiated neon aura.
9. The villain cast rainbow sparkles, then radiated neon aura.
10. The villain flashed glow whiskers, then flared with golden shimmer.
11. The villain raised a prism shield, then shone with silver glow.
12. The villain cast rainbow sparkles, then sparkled with cosmic shine.

TEACHER / PARENT

Answer Key

The Mystery of the Missing Prism Crystal

Culprit: Toby Twinkle

Starlight Beam · Cosmic Shine · Left Paws First · Pastel Pink Mane · Squeaky Toys

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

Clue 1 (Addition): "THE SUSPECT DOES NOT HAVE NEON AURA"

1893 + 2434 = 4327 (T) · 2739 + 4793 = 7532 (D) · 2966 + 2833 = 5799 (S) · 3025 + 3705 = 6730 (P) · 2627 + 1371 = 3998 (V) · 3260 + 4079 = 7339 (E) · 2936 + 4300 = 7236 (C) · 827 + 1368 = 2195 (N) · 2148 + 1887 = 4035 (R) · 1471 + 970 = 2441 (H) · 3112 + 4352 = 7464 (O) · 5332 + 2654 = 7986 (A) · 1453 + 1655 = 3108 (U)

Clue 2 (Subtraction): "THE CULPRIT STEPPED LEFT PAWS FIRST"

5430 - 1298 = 4132 (T) · 9230 - 1864 = 7366 (E) · 4333 - 58 = 4275 (F) · 9513 - 3735 = 5778 (A) · 9661 - 1768 = 7893 (U) · 8542 - 1973 = 6569 (W) · 7251 - 1352 = 5899 (D) · 5641 - 3134 = 2507 (C) · 7584 - 732 = 6852 (R) · 5707 - 1605 = 4102 (L) · 3164 - 205 = 2959 (S) · 7352 - 429 = 6923 (H) · 6164 - 4807 = 1357 (P) · 6050 - 1826 = 4224 (I)

Clue 3 (Multiplication facts (1-12)): "THE CULPRIT FLINCHED AT SQUEAKY TOYS"

12 × 4 = 48 (T) · 7 × 4 = 28 (I) · 7 × 12 = 84 (Q) · 1 × 3 = 3 (A) · 1 × 1 = 1 (P) · 4 × 1 = 4 (H) · 7 × 11 = 77 (S) · 8 × 10 = 80 (L) · 6 × 7 = 42 (D) · 10 × 7 = 70 (K) · 12 × 3 = 36 (N) · 6 × 5 = 30 (C) · 9 × 11 = 99 (E) · 9 × 6 = 54 (Y) · 12 × 9 = 108 (U) · 3 × 6 = 18 (R) · 3 × 8 = 24 (F) · 9 × 9 = 81 (O)

Clue 4 (Integers): "PASTEL PINK MANE FUR WAS LEFT BEHIND"

(-8) + 13 = 5 (P) · (-6) + 7 = 1 (R) · 3 - (-7) = 10 (T) · 2 - (-4) = 6 (W) · 11 - (-1) = 12 (S) · (-14) + 18 = 4 (N) · (-5) + 33 = 28 (B) · 17 - (-1) = 18 (F) · 11 - (-13) = 24 (H) · (-6) + 32 = 26 (D) · (-4) + 20 = 16 (L) · 19 - (-8) = 27 (M) · (-14) + 25 = 11 (E) · (-6) + 21 = 15 (K) · (-9) + 17 = 8 (I) · (-15) + 28 = 13 (A) · (-8) + 10 = 2 (U)

Clue 5 (Division facts (1-12)): surviving statement is box 7 → Toby Twinkle

60 ÷ 6 = 10 · 30 ÷ 10 = 3 · 11 ÷ 11 = 1 · 33 ÷ 3 = 11 · 54 ÷ 9 = 6 · 8 ÷ 2 = 4 · 20 ÷ 4 = 5 · 45 ÷ 5 = 9 · 24 ÷ 3 = 8 · 6 ÷ 3 = 2 · 24 ÷ 2 = 12