The Prism Core Heist

Grade 10 math · Pythagorean theorem, Square roots, Exponents, Order of operations · Reading level grades 7-9

Detective: _____ **Date:** _____

Someone breached the Neon Spark Sanctuary and stole the Master Crystal Horn. Search for clues and decode the security evidence to catch the 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 Rogue Bot is _____

Possible suspects

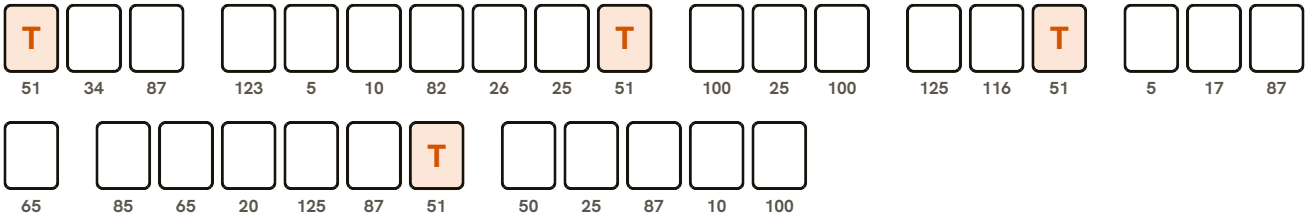
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY ABILITY	SPECIAL MODULE	SPARKING HAND	MANE STYLE	SYSTEM VULNERABILITY
Data Spark	Sonic Whinny	Hologram Clone	Left Handed Spark	Electric Blue Mane	Rust Spray
Glimmer Bot	Laser Horn Beam	Glitch Teleport	Right Handed Spark	Neon Pink Mane	Water Splash
Vapor Hoof	Turbo Mane Boost	Cyber Flight	Right Handed Spark	Chrome Mane	Water Splash
Circuit Star	Sonic Whinny	Battery Surge	Right Handed Spark	Neon Pink Mane	Water Splash
Starlight Core	Turbo Mane Boost	Magnet Field	Right Handed Spark	Neon Pink Mane	Water Splash
Quantum Whinny	Plasma Stomp	Magnet Field	Right Handed Spark	Electric Blue Mane	Water Splash
Prism Runner	Rainbow Shield	Glitch Teleport	Left Handed Spark	Chrome Mane	Water Splash
Pixel Gallop	Rainbow Shield	Hologram Clone	Left Handed Spark	Electric Blue Mane	Water Splash
Gizmo Mane	Turbo Mane Boost	Cyber Flight	Right Handed Spark	Electric Blue Mane	Water Splash
Sparky Nine	Turbo Mane Boost	Hologram Clone	Right Handed Spark	Neon Pink Mane	Magnet Pulse
Binary Beam	Turbo Mane Boost	Hologram Clone	Left Handed Spark	Electric Blue Mane	Rust Spray
Matrix Mare	Rainbow Shield	Battery Surge	Right Handed Spark	Neon Pink Mane	Rust Spray
Volt Pegasus	Plasma Stomp	Magnet Field	Left Handed Spark	Chrome Mane	Magnet Pulse
Laser Equus	Sonic Whinny	Glitch Teleport	Right Handed Spark	Neon Pink Mane	Water Splash
Unit Eighty Eight	Sonic Whinny	Magnet Field	Left Handed Spark	Electric Blue Mane	Rust Spray
Astra Five	Plasma Stomp	Glitch Teleport	Right Handed Spark	Chrome Mane	Water Splash
Neon Charger	Rainbow Shield	Cyber Flight	Right Handed Spark	Neon Pink Mane	Water Splash
Pulse Unicorn	Rainbow Shield	Glitch Teleport	Right Handed Spark	Neon Pink Mane	Rust Spray
Celeste Nova	Laser Horn Beam	Cyber Flight	Left Handed Spark	Electric Blue Mane	Magnet Pulse
Radian	Rainbow Shield	Hologram Clone	Right Handed Spark	Electric Blue Mane	Rust Spray
Vector Stallion	Rainbow Shield	Battery Surge	Left Handed Spark	Neon Pink Mane	Water Splash

CLUE 1 Pythagorean theorem

> The security grid calculated the straight line diagonal distance traveled across the sanctuary floor.

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



legs 24 and 45, hypotenuse = ☐ → T

legs 16 and 30, hypotenuse = ☐ → H

legs 28 and 96, hypotenuse = ☐ → D

legs 27 and 120, hypotenuse = ☐ → C

legs 12 and 16, hypotenuse = ☐ → G

legs 35 and 120, hypotenuse = ☐ → N

legs 60 and 63, hypotenuse = ☐ → E

legs 6 and 8, hypotenuse = ☐ → L

legs 10 and 24, hypotenuse = ☐ → R

legs 18 and 80, hypotenuse = ☐ → P

legs 3 and 4, hypotenuse = ☐ → U

legs 8 and 15, hypotenuse = ☐ → S

legs 40 and 75, hypotenuse = ☐ → M

legs 25 and 60, hypotenuse = ☐ → A

legs 80 and 84, hypotenuse = ☐ → O

legs 7 and 24, hypotenuse = ☐ → I

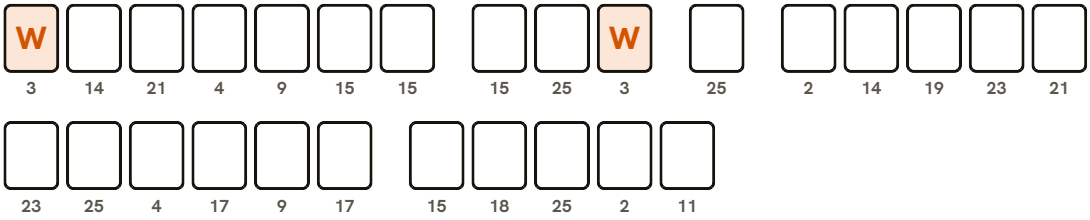
legs 30 and 40, hypotenuse = ☐ → F

Scratch space:

CLUE 2 Square roots

> To decode the primary lock box you must calculate the side length of a square energy vault from its area.

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



sqrt(9) = ☐ → **W**

sqrt(441) = ☐ → **T**

sqrt(16) = ☐ → **N**

sqrt(196) = ☐ → **I**

sqrt(361) = ☐ → **G**

sqrt(324) = ☐ → **P**

sqrt(625) = ☐ → **A**

sqrt(81) = ☐ → **E**

sqrt(289) = ☐ → **D**

sqrt(225) = ☐ → **S**

sqrt(529) = ☐ → **H**

sqrt(4) = ☐ → **R**

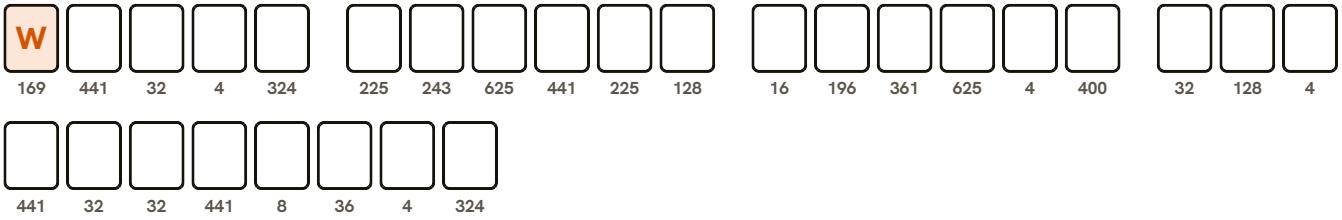
sqrt(121) = ☐ → **K**

Scratch space:

CLUE 3 Exponents

A rogue data virus is doubling node power exponentially across the network.

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



13^2 = ☐ → W

14^2 = ☐ → O

21^2 = ☐ → A

2^2 = ☐ → E

2^3 = ☐ → C

2^7 = ☐ → H

5^4 = ☐ → L

18^2 = ☐ → R

20^2 = ☐ → D

6^2 = ☐ → K

19^2 = ☐ → I

4^2 = ☐ → F

2^5 = ☐ → T

15^2 = ☐ → S

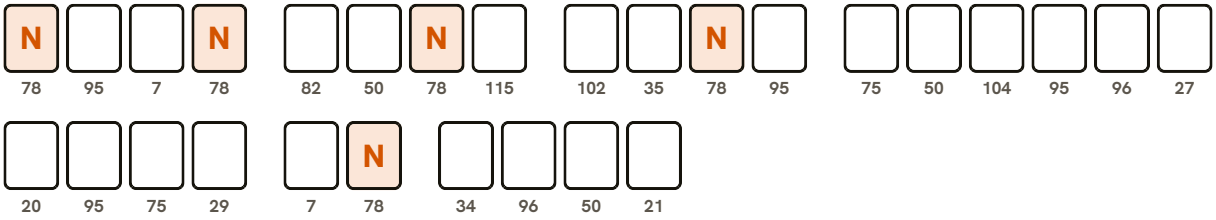
3^5 = ☐ → P

Scratch space:

CLUE 4 Order of operations

> The central computer requires evaluating a multi step command sequence in the correct order.

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



11 × 8 - 10 = ☐ → N	3 + 2 × 2 = ☐ → O	8 + 3 × 9 = ☐ → A
6 + 3 × 7 = ☐ → S	9 × 12 - 26 = ☐ → P	51 + 4 × 6 = ☐ → F
5 × 8 - 11 = ☐ → T	12 × 10 - 18 = ☐ → M	7 × 9 - 13 = ☐ → I
12 × 10 - 5 = ☐ → K	4 + 8 × 2 = ☐ → L	11 × 9 - 4 = ☐ → E
7 × 5 - 1 = ☐ → G	79 + 5 × 5 = ☐ → B	5 × 10 - 29 = ☐ → D
66 + 5 × 6 = ☐ → R		

Scratch space:

CLUE 5 Square roots - the last clue

> Analyzing the perimeter sensor sweep reveals a square coverage field that unlocks the final log.

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:

sqrt(49) = ☐ sqrt(121) = ☐ sqrt(81) = ☐ sqrt(25) = ☐ sqrt(36) = ☐

sqrt(144) = ☐ sqrt(9) = ☐ sqrt(4) = ☐ sqrt(64) = ☐ sqrt(16) = ☐

sqrt(100) = ☐

Step 2 - cross out the sentence with each answer:

1. The villain raised a rainbow shield, then engaged cyber flight.
2. The villain raised a rainbow shield, then projected a hologram clone.
3. The villain emitted a sonic whinny, then generated a magnet field.
4. The villain activated a turbo mane boost, then triggered a glitch teleport.
5. The villain fired a laser horn beam, then projected a hologram clone.
6. The villain emitted a sonic whinny, then projected a hologram clone.
7. The villain emitted a sonic whinny, then triggered a glitch teleport.
8. The villain unleashed a plasma stomp, then generated a magnet field.
9. The villain fired a laser horn beam, then triggered a glitch teleport.
10. The villain unleashed a plasma stomp, then projected a hologram clone.
11. The villain emitted a sonic whinny, then initiated a battery surge.
12. The villain raised a rainbow shield, then generated a magnet field.

TEACHER / PARENT

Answer Key

The Prism Core Heist

Culprit: Neon Charger

Rainbow Shield · Cyber Flight · Right Handed Spark · Neon Pink Mane · Water Splash

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Pythagorean theorem): "THE CULPRIT DID NOT USE A MAGNET FIELD"

legs 24 and 45, hypotenuse = 51 (T) · legs 16 and 30, hypotenuse = 34 (H) · legs 28 and 96, hypotenuse = 100 (D) · legs 27 and 120, hypotenuse = 123 (C) · legs 12 and 16, hypotenuse = 20 (G) · legs 35 and 120, hypotenuse = 125 (N) · legs 60 and 63, hypotenuse = 87 (E) · legs 6 and 8, hypotenuse = 10 (L) · legs 10 and 24, hypotenuse = 26 (R) · legs 18 and 80, hypotenuse = 82 (P) · legs 3 and 4, hypotenuse = 5 (U) · legs 8 and 15, hypotenuse = 17 (S) · legs 40 and 75, hypotenuse = 85 (M) · legs 25 and 60, hypotenuse = 65 (A) · legs 80 and 84, hypotenuse = 116 (O) · legs 7 and 24, hypotenuse = 25 (I) · legs 30 and 40, hypotenuse = 50 (F)

Clue 2 (Square roots): "WITNESS SAW A RIGHT HANDED SPARK"

sqrt(9) = 3 (W) · sqrt(441) = 21 (T) · sqrt(16) = 4 (N) · sqrt(196) = 14 (I) · sqrt(361) = 19 (G) · sqrt(324) = 18 (P) · sqrt(625) = 25 (A) · sqrt(81) = 9 (E) · sqrt(289) = 17 (D) · sqrt(225) = 15 (S) · sqrt(529) = 23 (H) · sqrt(4) = 2 (R) · sqrt(121) = 11 (K)

Clue 3 (Exponents): "WATER SPLASH FOILED THE ATTACKER"

13^2 = 169 (W) · 14^2 = 196 (O) · 21^2 = 441 (A) · 2^2 = 4 (E) · 2^3 = 8 (C) · 2^7 = 128 (H) · 5^4 = 625 (L) · 18^2 = 324 (R) · 20^2 = 400 (D) · 6^2 = 36 (K) · 19^2 = 361 (I) · 4^2 = 16 (F) · 2^5 = 32 (T) · 15^2 = 225 (S) · 3^5 = 243 (P)

Clue 4 (Order of operations): "NEON PINK MANE FIBERS LEFT ON GRID"

11 × 8 - 10 = 78 (N) · 3 + 2 × 2 = 7 (O) · 8 + 3 × 9 = 35 (A) · 6 + 3 × 7 = 27 (S) · 9 × 12 - 26 = 82 (P) · 51 + 4 × 6 = 75 (F) · 5 × 8 - 11 = 29 (T) · 12 × 10 - 18 = 102 (M) · 7 × 9 - 13 = 50 (I) · 12 × 10 - 5 = 115 (K) · 4 + 8 × 2 = 20 (L) · 11 × 9 - 4 = 95 (E) · 7 × 5 - 1 = 34 (G) · 79 + 5 × 5 = 104 (B) · 5 × 10 - 29 = 21 (D) · 66 + 5 × 6 = 96 (R)

Clue 5 (Square roots): surviving statement is box 1 → Neon Charger

sqrt(49) = 7 · sqrt(121) = 11 · sqrt(81) = 9 · sqrt(25) = 5 · sqrt(36) = 6 · sqrt(144) = 12 · sqrt(9) = 3 · sqrt(4) = 2 · sqrt(64) = 8 · sqrt(16) = 4 · sqrt(100) = 10