



# The Bedrock Griefing Incident

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

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

A mysterious rogue player has hijacked the server's master command block, trapping the Master Architect's base inside an unbreakable bedrock cage. We need to inspect the leftover blocks, inventory files, and redstone logs to reveal the Griefer's true identity.

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 Griefing Master is** \_\_\_\_\_

# Possible suspects

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

| NAME            | GRIEFING METHOD   | ESCAPE GEAR            | COMBAT STANCE        | HEADGEAR         | TACTICAL WEAKNESS         |
|-----------------|-------------------|------------------------|----------------------|------------------|---------------------------|
| WitherWill      | TNT blasting      | totem of undying       | uses offhand shield  | golden helmet    | splash potion of slowness |
| Mumbo           | lava casting      | ender pearls           | uses offhand shield  | golden helmet    | smite enchant             |
| Jeb             | bedrock hacking   | netherite armor        | holds map in offhand | chainmail helmet | smite enchant             |
| Alex            | bedrock hacking   | netherite armor        | uses offhand shield  | turtle shell     | bucket of water           |
| ObsidianRex     | phantom summoning | ender pearls           | holds map in offhand | golden helmet    | bucket of water           |
| Hermit          | lava casting      | elytra wings           | uses offhand shield  | chainmail helmet | smite enchant             |
| Steve           | bedrock hacking   | totem of undying       | uses offhand shield  | golden helmet    | smite enchant             |
| Sparky          | bedrock hacking   | ender pearls           | uses offhand shield  | chainmail helmet | bucket of water           |
| NetherKnight    | redstone looping  | enchanted golden apple | holds map in offhand | turtle shell     | smite enchant             |
| CaptainSparklez | lava casting      | ender pearls           | holds map in offhand | golden helmet    | smite enchant             |
| GhastGuy        | phantom summoning | netherite armor        | uses offhand shield  | golden helmet    | smite enchant             |
| BlazeBill       | bedrock hacking   | enchanted golden apple | uses offhand shield  | golden helmet    | splash potion of slowness |
| CobaltCraft     | TNT blasting      | totem of undying       | holds map in offhand | golden helmet    | splash potion of slowness |
| Grian           | lava casting      | netherite armor        | uses offhand shield  | turtle shell     | smite enchant             |
| LapisLuke       | redstone looping  | ender pearls           | uses offhand shield  | turtle shell     | smite enchant             |
| CreeperSam      | lava casting      | totem of undying       | uses offhand shield  | golden helmet    | bucket of water           |
| DanTDM          | TNT blasting      | netherite armor        | holds map in offhand | chainmail helmet | smite enchant             |
| DiamondDave     | lava casting      | enchanted golden apple | uses offhand shield  | golden helmet    | smite enchant             |
| RedstonePro     | TNT blasting      | elytra wings           | holds map in offhand | golden helmet    | smite enchant             |
| Blocky          | TNT blasting      | elytra wings           | uses offhand shield  | chainmail helmet | smite enchant             |
| EnderBoy        | TNT blasting      | ender pearls           | uses offhand shield  | golden helmet    | smite enchant             |

### CLUE 1

## Pythagorean theorem

To calculate the distance between the griever's getaway boat and the shore, we must find the hypotenuse of the right triangle formed by the coordinates. Solve the formula to trace the escape path.

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

|     |    |    |    |     |    |    |     |     |     |    |    |    |     |    |     |    |    |    |     |
|-----|----|----|----|-----|----|----|-----|-----|-----|----|----|----|-----|----|-----|----|----|----|-----|
| 82  | 50 | 52 | 52 | 123 | 50 | 74 | 29  | 123 | 41  | 74 | 26 |    |     |    |     |    |    |    |     |
| 116 | 74 | 34 | 29 | 123 | 74 | 17 | 116 | 25  | 111 | 26 | 52 | 25 | 116 | 74 | 123 | 58 | 58 | 52 | 116 |

legs 18 and 80, hypotenuse =   $\rightarrow$  **V**

legs 40 and 42, hypotenuse =   $\rightarrow$  **P**

legs 8 and 15, hypotenuse =   $\rightarrow$  **T**

legs 14 and 48, hypotenuse =   $\rightarrow$

legs 20 and 21, hypotenuse =  → **H**

legs 16 and 30, hypotenuse =  → **C**

legs 36 and 105, hypotenuse =  → **G**

legs 27 and 120, hypotenuse =   $\rightarrow$  **A**

legs 9 and 40, hypotenuse =  → **S**

legs 15 and 20, hypotenuse =   $\rightarrow$  **D**

legs 80 and 84, hypotenuse =  → **E**

legs 24 and 70, hypotenuse =  → **N**

legs 10 and 24, hypotenuse =  → **0**

legs 20 and 48, hypotenuse =   $\rightarrow$  **L**

Scratch space:

## CLUE 2 Square roots

The griever fenced off a perfectly square plot of obsidian blocks. We need to find the side length of this square region from its total area to locate the hidden chest.

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

|    |    |    |    |   |   |  |    |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|---|---|--|----|---|----|----|----|---|----|----|----|----|----|----|----|----|----|----|
| S  |    |    |    |   |   |  | S  |   |    |    |    |   |    |    |    | S  |    |    |    |    |    |    |
| 18 | 23 | 8  | 20 | 5 | 4 |  | 18 | 2 | 11 | 15 | 24 | 2 | 23 | 20 | 18 | 22 | 20 | 11 | 20 |    |    |    |
|    |    |    |    |   |   |  |    |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |
| 10 | 12 | 16 | 3  | 4 |   |  | 12 | 3 |    |    |    |   |    |    |    | 4  | 12 | 12 | 11 | 22 | 15 | 17 |

|                                                   |                                                   |                                                   |
|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| $\text{sqrt}(324) = \square \rightarrow \text{S}$ | $\text{sqrt}(256) = \square \rightarrow \text{U}$ | $\text{sqrt}(225) = \square \rightarrow \text{A}$ |
| $\text{sqrt}(16) = \square \rightarrow \text{D}$  | $\text{sqrt}(121) = \square \rightarrow \text{R}$ | $\text{sqrt}(4) = \square \rightarrow \text{C}$   |
| $\text{sqrt}(100) = \square \rightarrow \text{F}$ | $\text{sqrt}(64) = \square \rightarrow \text{I}$  | $\text{sqrt}(25) = \square \rightarrow \text{L}$  |
| $\text{sqrt}(9) = \square \rightarrow \text{N}$   | $\text{sqrt}(144) = \square \rightarrow \text{O}$ | $\text{sqrt}(484) = \square \rightarrow \text{W}$ |
| $\text{sqrt}(400) = \square \rightarrow \text{E}$ | $\text{sqrt}(289) = \square \rightarrow \text{Y}$ | $\text{sqrt}(576) = \square \rightarrow \text{T}$ |
| $\text{sqrt}(529) = \square \rightarrow \text{H}$ |                                                   |                                                   |

Scratch space:

### CLUE 3 Exponents

The redstone signal multiplies rapidly, doubling its power strength with each tick. Calculate the exponential growth of the pulse to disable the security lock.

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

|    |     |     |     |   |    |    |     |     |     |     |     |    |     |    |   |     |    |     |  |
|----|-----|-----|-----|---|----|----|-----|-----|-----|-----|-----|----|-----|----|---|-----|----|-----|--|
| T  |     |     |     |   |    |    |     |     |     |     |     |    | T   |    |   |     |    |     |  |
| 36 | 216 | 324 | 441 | 4 | 25 | 64 | 144 | 400 | 324 | 121 | 169 | 36 | 169 | 49 | 8 | 343 | 25 | 121 |  |

  

|   |    |    |     |    |     |    |    |     |     |     |   |     |     |     |    |
|---|----|----|-----|----|-----|----|----|-----|-----|-----|---|-----|-----|-----|----|
|   |    | T  |     |    |     |    | T  |     |     |     |   |     |     |     | T  |
| 8 | 64 | 36 | 216 | 49 | 128 | 64 | 36 | 324 | 324 | 144 | 4 | 216 | 169 | 144 | 36 |

|                                |                                |                                |                                |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| $6^2 = \square \rightarrow$ T  | $4^3 = \square \rightarrow$ I  | $11^2 = \square \rightarrow$ D | $5^2 = \square \rightarrow$ R  |
| $13^2 = \square \rightarrow$ A | $2^2 = \square \rightarrow$ C  | $2^7 = \square \rightarrow$ M  | $12^2 = \square \rightarrow$ N |
| $2^3 = \square \rightarrow$ W  | $20^2 = \square \rightarrow$ G | $7^3 = \square \rightarrow$ O  | $7^2 = \square \rightarrow$ S  |
| $18^2 = \square \rightarrow$ E | $6^3 = \square \rightarrow$ H  | $21^2 = \square \rightarrow$ Y |                                |

Scratch space:

## Order of operations

Our crafting recipe analyzer got jumbled up by a virus. Follow the strict order of operations to count the exact number of raw materials needed for the antidote.

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

A number line from 0 to 100 with increments of 10. The number 63 is highlighted in orange and labeled with a 'G'. The number 54 is also highlighted in orange. The numbers 49, 29, 82, 64, 62, 23, 64, 72, 55, 29, 54, 47, 55, 57, 107, 62, 63, and 54 are placed in the corresponding boxes.

$$53 + 5 \times 2 = \boxed{\phantom{00}} \rightarrow \mathbf{G}$$

$$9 \times 12 - 26 = \boxed{\phantom{00}} \rightarrow \boxed{\text{D}}$$

$$33 + 2 \times 7 = \boxed{\phantom{00}} \rightarrow \boxed{\text{H}}$$

$$17 + 5 \times 8 = \boxed{\phantom{00}} \rightarrow \mathbf{V}$$

$$11 \times 11 - 14 = \boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}} \mid$$

$$3 \times 10^{-7} = \boxed{\phantom{000}} \rightarrow \boxed{\text{M}}$$

$10 \times 10 - 28 = \boxed{\phantom{00}} \rightarrow \mathbf{T}$

$$8 \times 9 - 10 = \boxed{\phantom{00}} \rightarrow \mathbf{N}$$

$39 + 5 \times 5 = \boxed{\phantom{00}} \rightarrow \mathbf{E}$

$$8 \times 9 - 1 = \boxed{\phantom{00}} \rightarrow \boxed{\text{R}}$$

$$54 + 5 \times 9 = \boxed{\phantom{000}} \rightarrow \boxed{\text{W}}$$

$11 \times 12 - 15 = \boxed{\phantom{000}} \rightarrow \boxed{\text{F}}$

$$4 \times 11 - 15 = \boxed{\phantom{00}} \rightarrow \boxed{\text{L}}$$

$9 \times 7 - 9 = \boxed{\phantom{00}} \rightarrow \boxed{\text{S}}$

$$11 \times 6 - 17 = \boxed{\phantom{00}} \rightarrow \boxed{0}$$

$$46 + 3 \times 3 = \boxed{\phantom{00}} \rightarrow \mathbf{A}$$

Scratch space:

**CLUE 5****Square roots - the last clue**

The bedrock cage is built on a square chunk base. Solve for the root of the chunk's total block area to find the coordinates of the command block.

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:**

$\text{sqrt}(49) = \boxed{\phantom{00}}$

$\text{sqrt}(144) = \boxed{\phantom{00}}$

$\text{sqrt}(4) = \boxed{\phantom{00}}$

$\text{sqrt}(81) = \boxed{\phantom{00}}$

$\text{sqrt}(121) = \boxed{\phantom{00}}$

$\text{sqrt}(16) = \boxed{\phantom{00}}$

$\text{sqrt}(36) = \boxed{\phantom{00}}$

$\text{sqrt}(25) = \boxed{\phantom{00}}$

$\text{sqrt}(1) = \boxed{\phantom{00}}$

$\text{sqrt}(64) = \boxed{\phantom{00}}$

$\text{sqrt}(9) = \boxed{\phantom{00}}$

**Step 2 - cross out the sentence with each answer:**

1. The villain summoned a swarm of screeching phantoms in the sky, then escaped death using a golden totem of undying.
2. The villain summoned a swarm of screeching phantoms in the sky, then escaped by flying away with elytra wings.
3. The villain poured molten lava over the town hall, then restored health with an enchanted golden apple.
4. The villain created an infinite loop of noisy redstone piston machines, then restored health with an enchanted golden apple.
5. The villain placed unbreakable blocks around the spawn portal, then teleported away using a shiny ender pearl.
6. The villain blasted a giant crater in the spawn area, then escaped death using a golden totem of undying.
7. The villain placed unbreakable blocks around the spawn portal, then escaped death using a golden totem of undying.
8. The villain created an infinite loop of noisy redstone piston machines, then tanked the guards with heavy netherite armor.
9. The villain blasted a giant crater in the spawn area, then tanked the guards with heavy netherite armor.
10. The villain poured molten lava over the town hall, then teleported away using a shiny ender pearl.
11. The villain created an infinite loop of noisy redstone piston machines, then escaped death using a golden totem of undying.
12. The villain blasted a giant crater in the spawn area, then teleported away using a shiny ender pearl.

# Answer Key

## The Bedrock Griefing Incident

### Culprit: Mumbo

lava casting · ender pearls · uses offhand shield · golden helmet · smite enchant

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 8 → Clue 4 4 → Clue 5 1

### Clue 1 (Pythagorean theorem): "VILLAIN HAS NO ENCHANTED GOLDEN APPLE"

legs 18 and 80, hypotenuse = 82 (V) · legs 40 and 42, hypotenuse = 58 (P) · legs 8 and 15, hypotenuse = 17 (T) · legs 14 and 48, hypotenuse = 50 (I) · legs 20 and 21, hypotenuse = 29 (H) · legs 16 and 30, hypotenuse = 34 (C) · legs 36 and 105, hypotenuse = 111 (G) · legs 27 and 120, hypotenuse = 123 (A) · legs 9 and 40, hypotenuse = 41 (S) · legs 15 and 20, hypotenuse = 25 (D) · legs 80 and 84, hypotenuse = 116 (E) · legs 24 and 70, hypotenuse = 74 (N) · legs 10 and 24, hypotenuse = 26 (O) · legs 20 and 48, hypotenuse = 52 (L)

### Clue 2 (Square roots): "SHIELD SCRATCHES WERE FOUND ON THE DOORWAY"

$\sqrt{324} = 18$  (S) ·  $\sqrt{256} = 16$  (U) ·  $\sqrt{225} = 15$  (A) ·  $\sqrt{16} = 4$  (D) ·  $\sqrt{121} = 11$  (R) ·  $\sqrt{4} = 2$  (C) ·  $\sqrt{100} = 10$  (F) ·  $\sqrt{64} = 8$  (I) ·  $\sqrt{25} = 5$  (L) ·  $\sqrt{9} = 3$  (N) ·  $\sqrt{144} = 12$  (O) ·  $\sqrt{484} = 22$  (W) ·  $\sqrt{400} = 20$  (E) ·  $\sqrt{289} = 17$  (Y) ·  $\sqrt{576} = 24$  (T) ·  $\sqrt{529} = 23$  (H)

### Clue 3 (Exponents): "THEY CRINGED AT A SWORD WITH SMITE ENCHANT"

$6^2 = 36$  (T) ·  $4^3 = 64$  (I) ·  $11^2 = 121$  (D) ·  $5^2 = 25$  (R) ·  $13^2 = 169$  (A) ·  $2^2 = 4$  (C) ·  $2^7 = 128$  (M) ·  $12^2 = 144$  (N) ·  $2^3 = 8$  (W) ·  $20^2 = 400$  (G) ·  $7^3 = 343$  (O) ·  $7^2 = 49$  (S) ·  $18^2 = 324$  (E) ·  $6^3 = 216$  (H) ·  $21^2 = 441$  (Y)

### Clue 4 (Order of operations): "GOLDEN METAL SHAVINGS WERE LEFT ON THE ANVIL"

$53 + 5 \times 2 = 63$  (G) ·  $9 \times 12 - 26 = 82$  (D) ·  $33 + 2 \times 7 = 47$  (H) ·  $17 + 5 \times 8 = 57$  (V) ·  $11 \times 11 - 14 = 107$  (I) ·  $3 \times 10 - 7 = 23$  (M) ·  $10 \times 10 - 28 = 72$  (T) ·  $8 \times 9 - 10 = 62$  (N) ·  $39 + 5 \times 5 = 64$  (E) ·  $8 \times 9 - 1 = 71$  (R) ·  $54 + 5 \times 9 = 99$  (W) ·  $11 \times 12 - 15 = 117$  (F) ·  $4 \times 11 - 15 = 29$  (L) ·  $9 \times 7 - 9 = 54$  (S) ·  $11 \times 6 - 17 = 49$  (O) ·  $46 + 3 \times 3 = 55$  (A)

### Clue 5 (Square roots): surviving statement is box 10 → Mumbo

$\sqrt{49} = 7$  ·  $\sqrt{144} = 12$  ·  $\sqrt{4} = 2$  ·  $\sqrt{81} = 9$  ·  $\sqrt{121} = 11$  ·  $\sqrt{16} = 4$  ·  $\sqrt{36} = 6$  ·  $\sqrt{25} = 5$  ·  $\sqrt{1} = 1$  ·  $\sqrt{64} = 8$  ·  $\sqrt{9} = 3$