



The Glitch in the Citadel

Grade 5 math · Addition, Subtraction, Fractions of a number, Order of operations, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The arcade machine in the back of the shop is glowing. The final boss of Mega Quest Omega has broken out of the code and trapped the Lead Programmer inside the mainframe. Only one of the twenty-four virtual boss avatars in the game database is the real glitched villain. You must use the combat logs and code files to identify the culprit before the game deletes its own save files.

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 Corrupt Boss is _____

Possible suspects

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

NAME	ULTIMATE ATTACK	LOOT DROP	INPUT HAND	GLOW EFFECT	EXPLOIT PATCH
Ganondorf	Gravity Vortex	Shield Potion	Right Handed	Neon Blue Flame	Ice Strike
Grigori	Glitch Wave	Speed Ring	Right Handed	Neon Blue Flame	Water Attack
Kefka	Laser Barrage	Spike Boots	Left Handed	Neon Red Spark	Water Attack
M Bison	Thunder Smash	Shield Potion	Left Handed	Neon Green Aura	Ice Strike
Ridley	Thunder Smash	Golden Key	Right Handed	Neon Green Aura	Fire Charge
Grandy	Gravity Vortex	Shield Potion	Right Handed	Neon Red Spark	Water Attack
Dr Eggman	Thunder Smash	Spike Boots	Left Handed	Neon Blue Flame	Fire Charge
Mecha Sonic	Gravity Vortex	Pixel Sword	Right Handed	Neon Blue Flame	Fire Charge
Dr Neo Cortex	Glitch Wave	Speed Ring	Right Handed	Neon Blue Flame	Ice Strike
Andross	Laser Barrage	Golden Key	Left Handed	Neon Blue Flame	Water Attack
Dracula	Gravity Vortex	Shield Potion	Left Handed	Neon Red Spark	Ice Strike
Sigma	Meteor Rain	Speed Ring	Left Handed	Neon Blue Flame	Fire Charge
Albert Wesker	Laser Barrage	Golden Key	Right Handed	Neon Blue Flame	Fire Charge
Giga Bowser	Meteor Rain	Spike Boots	Right Handed	Neon Blue Flame	Fire Charge
King K Rool	Meteor Rain	Pixel Sword	Right Handed	Neon Blue Flame	Fire Charge
Alduin	Thunder Smash	Golden Key	Right Handed	Neon Red Spark	Water Attack
Sephiroth	Gravity Vortex	Golden Key	Right Handed	Neon Green Aura	Fire Charge
Malos	Laser Barrage	Speed Ring	Left Handed	Neon Blue Flame	Fire Charge
Ganon	Gravity Vortex	Shield Potion	Right Handed	Neon Blue Flame	Fire Charge
Shao Kahn	Meteor Rain	Golden Key	Right Handed	Neon Red Spark	Fire Charge
Tabuu	Gravity Vortex	Pixel Sword	Right Handed	Neon Blue Flame	Ice Strike

CLUE 1

To unlock the secure system log, we must add up the total experience points dropped by the minibosses in the first stage. Once we combine these numbers, the code unlocks our first hint.

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

Diagram illustrating a sequence of numbers arranged in two rows of boxes. The top row contains 15 boxes, and the bottom row contains 15 boxes. Some boxes are highlighted in orange and contain the letter 'T'.

Top row (left to right):

- Box 1: Orange, contains 'T' (Number: 6892)
- Box 2: White (Number: 8433)
- Box 3: White (Number: 3039)
- Box 4: White (Number: 8896)
- Box 5: White (Number: 3891)
- Box 6: White (Number: 6325)
- Box 7: White (Number: 6325)
- Box 8: White (Number: 2096)
- Box 9: White (Number: 3891)
- Box 10: White (Number: 7940)
- Box 11: White (Number: 6618)
- Box 12: White (Number: 8774)
- Box 13: White (Number: 3039)
- Box 14: White (Number: 6227)
- Box 15: White (Number: 7940)

Bottom row (left to right):

- Box 1: White (Number: 6618)
- Box 2: White (Number: 5507)
- Box 3: White (Number: 8774)
- Box 4: White (Number: 5339)
- Box 5: Orange, contains 'T' (Number: 6892)
- Box 6: White (Number: 8433)
- Box 7: White (Number: 3039)
- Box 8: White (Number: 6227)
- Box 9: White (Number: 8433)
- Box 10: White (Number: 3891)
- Box 11: White (Number: 3039)
- Box 12: White (Number: 6325)
- Box 13: White (Number: 6618)
- Box 14: White (Number: 5339)
- Box 15: White (Number: 8774)

$$4807 + 2085 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$2612 + 2727 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$2718 + 5715 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$1968 + 3539 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$3167 + 5607 = \boxed{} \rightarrow \boxed{0}$$

$$4283 + 2335 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$1748 + 1291 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$3316 + 5580 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$3335 + 2990 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$1264 + 2627 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$3790 + 4150 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$4198 + 2029 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$690 + 1406 = \boxed{} \rightarrow \boxed{\text{A}}$$

Scratch space:

CLUE 2 Subtraction

The boss has massive health. If we subtract the damage from our hero's critical strike from the total boss health bar, we can calculate the remaining energy and read the combat log.

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

T															T		
4655	8019	4808	4808	6573	4808	1277	4193	8019	5551	5817	4852	7609	4655	8019	4808		

								T						T				
7609	8990	5551	4202	4852	7586	6573	4655	8019	4808	4202	7586	4424	8019	4655	8019	6706	6573	4852

$5764 - 1109 = \square \rightarrow \boxed{\text{T}}$	$5853 - 1045 = \square \rightarrow \boxed{\text{E}}$	$8238 - 219 = \square \rightarrow \boxed{\text{H}}$
$9429 - 3612 = \square \rightarrow \boxed{\text{L}}$	$11166 - 3557 = \square \rightarrow \boxed{\text{S}}$	$7426 - 1875 = \square \rightarrow \boxed{\text{O}}$
$10108 - 3402 = \square \rightarrow \boxed{\text{A}}$	$1759 - 482 = \square \rightarrow \boxed{\text{M}}$	$10137 - 2551 = \square \rightarrow \boxed{\text{I}}$
$5357 - 933 = \square \rightarrow \boxed{\text{G}}$	$9051 - 61 = \square \rightarrow \boxed{\text{W}}$	$5992 - 1799 = \square \rightarrow \boxed{\text{Y}}$
$6470 - 1618 = \square \rightarrow \boxed{\text{D}}$	$6586 - 13 = \square \rightarrow \boxed{\text{N}}$	$4567 - 365 = \square \rightarrow \boxed{\text{R}}$

Scratch space:

CLUE 3
Fractions of a number

The portal runs on a mana battery. We need to charge exactly three-fifths of the battery's total storage to activate the console and see which pixels are glitched.

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

T								T					T					
3	20	24	15	34	19	18	3	24	14	3	32	12	24	18				
15	32	31	6	15	4	15	21	32	15	32	29	24	35	14	34	15		
35	6	14	24															

$6/8 \text{ of } 4 = \square \rightarrow \boxed{\text{T}}$

$4/6 \text{ of } 48 = \square \rightarrow \boxed{\text{A}}$

$1/2 \text{ of } 12 = \square \rightarrow \boxed{\text{I}}$

$2/10 \text{ of } 170 = \square \rightarrow \boxed{\text{O}}$

$4/8 \text{ of } 30 = \square \rightarrow \boxed{\text{M}}$

$1/4 \text{ of } 80 = \square \rightarrow \boxed{\text{H}}$

$2/6 \text{ of } 12 = \square \rightarrow \boxed{\text{U}}$

$2/10 \text{ of } 155 = \square \rightarrow \boxed{\text{X}}$

$1/3 \text{ of } 42 = \square \rightarrow \boxed{\text{R}}$

$4/8 \text{ of } 38 = \square \rightarrow \boxed{\text{N}}$

$6/8 \text{ of } 24 = \square \rightarrow \boxed{\text{S}}$

$3/8 \text{ of } 32 = \square \rightarrow \boxed{\text{K}}$

$1/5 \text{ of } 145 = \square \rightarrow \boxed{\text{G}}$

$2/10 \text{ of } 105 = \square \rightarrow \boxed{\text{D}}$

$1/5 \text{ of } 120 = \square \rightarrow \boxed{\text{E}}$

$1/3 \text{ of } 105 = \square \rightarrow \boxed{\text{F}}$

Scratch space:

CLUE 4
Order of operations

We found a complex combat combo formula. To solve the sequence of multipliers, we must use the correct order of operations to crack the cipher on the final boss's gear.

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

W									W								
58	34	20	70	14	12	30	54	26	70	58	42	12	54	15	26	14	34
45	42	62	34	26	25	24	16	16	60	34	25	31	34	12	34		

$8 \times 10 - 22 = \square \rightarrow \text{W}$

$7 \times 7 - 29 = \square \rightarrow \text{F}$

$11 \times 7 - 15 = \square \rightarrow \text{X}$

$5 \times 7 - 19 = \square \rightarrow \text{T}$

$16 + 2 \times 9 = \square \rightarrow \text{E}$

$2 \times 10 - 5 = \square \rightarrow \text{B}$

$27 + 9 \times 2 = \square \rightarrow \text{P}$

$3 + 3 \times 3 = \square \rightarrow \text{N}$

$4 + 5 \times 2 = \square \rightarrow \text{U}$

$15 + 5 \times 2 = \square \rightarrow \text{S}$

$7 \times 8 - 2 = \square \rightarrow \text{G}$

$10 \times 5 - 24 = \square \rightarrow \text{L}$

$10 + 5 \times 4 = \square \rightarrow \text{D}$

$18 + 8 \times 3 = \square \rightarrow \text{I}$

$7 \times 11 - 17 = \square \rightarrow \text{H}$

$8 \times 10 - 10 = \square \rightarrow \text{O}$

$6 \times 8 - 24 = \square \rightarrow \text{A}$

$4 \times 12 - 17 = \square \rightarrow \text{C}$

Scratch space:

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

The developer left behind a supply of energy crystals. If we divide the crystals equally among our five party members, the leftover energy highlights the boss's main vulnerability.

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:

$2 \div 2 = \boxed{}$

$2 \div 1 = \boxed{}$

$96 \div 8 = \boxed{}$

$63 \div 7 = \boxed{}$

$45 \div 9 = \boxed{}$

$110 \div 11 = \boxed{}$

$28 \div 4 = \boxed{}$

$24 \div 6 = \boxed{}$

$18 \div 3 = \boxed{}$

$66 \div 6 = \boxed{}$

$36 \div 12 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain fires a massive laser barrage, then drops a golden key.
2. The villain summons a heavy gravity vortex, then flees with a pixel sword.
3. The villain slams down with a thunder smash, then escapes with a speed ring.
4. The villain fires a massive laser barrage, then flees with a pixel sword.
5. The villain unleashes a corrupted glitch wave, then leaves behind a shield potion.
6. The villain fires a massive laser barrage, then leaves behind a shield potion.
7. The villain unleashes a corrupted glitch wave, then flees with a pixel sword.
8. The villain casts meteor rain across the screen, then flees with a pixel sword.
9. The villain summons a heavy gravity vortex, then leaves behind a shield potion.
10. The villain summons a heavy gravity vortex, then stomps away in spike boots.
11. The villain casts meteor rain across the screen, then leaves behind a shield potion.
12. The villain casts meteor rain across the screen, then stomps away in spike boots.

Answer Key

The Glitch in the Citadel

Culprit: King K Rool

Meteor Rain · Pixel Sword · Right Handed · Neon Blue Flame · Fire Charge

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE VILLAIN DOES NOT DROP THE SHIELD POTION"

$4807 + 2085 = 6892$ (T) · $2612 + 2727 = 5339$ (P) · $2718 + 5715 = 8433$ (H) · $1968 + 3539 = 5507$ (R) · $3167 + 5607 = 8774$ (O) · $4283 + 2335 = 6618$ (D) · $1748 + 1291 = 3039$ (E) · $3316 + 5580 = 8896$ (V) · $3335 + 2990 = 6325$ (L) · $1264 + 2627 = 3891$ (I) · $3790 + 4150 = 7940$ (N) · $4198 + 2029 = 6227$ (S) · $690 + 1406 = 2096$ (A)

Clue 2 (Subtraction): "THE ENEMY HOLDS THE SWORD IN THE RIGHT HAND"

$5764 - 1109 = 4655$ (T) · $5853 - 1045 = 4808$ (E) · $8238 - 219 = 8019$ (H) · $9429 - 3612 = 5817$ (L) · $11166 - 3557 = 7609$ (S) · $7426 - 1875 = 5551$ (O) · $10108 - 3402 = 6706$ (A) · $1759 - 482 = 1277$ (M) · $10137 - 2551 = 7586$ (I) · $5357 - 933 = 4424$ (G) · $9051 - 61 = 8990$ (W) · $5992 - 1799 = 4193$ (Y) · $6470 - 1618 = 4852$ (D) · $6586 - 13 = 6573$ (N) · $4567 - 365 = 4202$ (R)

Clue 3 (Fractions of a number): "THE MONSTER TAKES MAXIMUM DAMAGE FROM FIRE"

$\frac{6}{8}$ of 4 = 3 (T) · $\frac{4}{6}$ of 48 = 32 (A) · $\frac{1}{2}$ of 12 = 6 (I) · $\frac{2}{10}$ of 170 = 34 (O) · $\frac{4}{8}$ of 30 = 15 (M) · $\frac{1}{4}$ of 80 = 20 (H) · $\frac{2}{6}$ of 12 = 4 (U) · $\frac{2}{10}$ of 155 = 31 (X) · $\frac{1}{3}$ of 42 = 14 (R) · $\frac{4}{8}$ of 38 = 19 (N) · $\frac{6}{8}$ of 24 = 18 (S) · $\frac{3}{8}$ of 32 = 12 (K) · $\frac{1}{5}$ of 145 = 29 (G) · $\frac{2}{10}$ of 105 = 21 (D) · $\frac{1}{5}$ of 120 = 24 (E) · $\frac{1}{3}$ of 105 = 35 (F)

Clue 4 (Order of operations): "WE FOUND GLOWING BLUE PIXELS AT THE SCENE"

$8 \times 10 - 22 = 58$ (W) · $7 \times 7 - 29 = 20$ (F) · $11 \times 7 - 15 = 62$ (X) · $5 \times 7 - 19 = 16$ (T) · $16 + 2 \times 9 = 34$ (E) · $2 \times 10 - 5 = 15$ (B) · $27 + 9 \times 2 = 45$ (P) · $3 + 3 \times 3 = 12$ (N) · $4 + 5 \times 2 = 14$ (U) · $15 + 5 \times 2 = 25$ (S) · $7 \times 8 - 2 = 54$ (G) · $10 \times 5 - 24 = 26$ (L) · $10 + 5 \times 4 = 30$ (D) · $18 + 8 \times 3 = 42$ (I) · $7 \times 11 - 17 = 60$ (H) · $8 \times 10 - 10 = 70$ (O) · $6 \times 8 - 24 = 24$ (A) · $4 \times 12 - 17 = 31$ (C)

Clue 5 (Division facts (1-12)): surviving statement is box 8 → King K Rool

$2 \div 2 = 1$ · $2 \div 1 = 2$ · $96 \div 8 = 12$ · $63 \div 7 = 9$ · $45 \div 9 = 5$ · $110 \div 11 = 10$ · $28 \div 4 = 7$ · $24 \div 6 = 4$ · $18 \div 3 = 6$ · $66 \div 6 = 11$ · $36 \div 12 = 3$