



The Great Museum Grief

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

Detective: _____ Date: _____

Someone broke into the grand museum on the server and stole the legendary Golden Apple! The server admin needs your help to catch the grieving phantom before they log off.

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 grieving phantom is _____

Possible suspects

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

NAME	PRIMARY TOOL	MODDED WEAPON	HOLDING ITEM	HELMET TYPE	FEARED BLOCK
Etho	golden axe	firework crossbow	holding torch	turtle shell	lava bucket
Jimmy	stone sword	ender pearl staff	holding shield	gold helmet	water splash
Mumbo	iron hoe	firework crossbow	holding shield	turtle shell	water splash
DanTDM	golden axe	firework crossbow	holding torch	gold helmet	lava bucket
Jeb	iron hoe	slimeball slinger	holding torch	iron helmet	soul sand
Grian	netherite pickaxe	firework crossbow	holding torch	iron helmet	lava bucket
Impulse	diamond shovel	slimeball slinger	holding torch	iron helmet	lava bucket
Stampy	diamond shovel	slimeball slinger	holding torch	iron helmet	soul sand
GoodTimesWithScar	diamond shovel	ender pearl staff	holding shield	iron helmet	lava bucket
Tango	iron hoe	firework crossbow	holding torch	iron helmet	lava bucket
AntFrost	golden axe	ender pearl staff	holding torch	iron helmet	lava bucket
Steve	golden axe	firework crossbow	holding torch	iron helmet	lava bucket
GeminiTay	iron hoe	tnt launcher	holding shield	gold helmet	water splash
BdoubleO	netherite pickaxe	potion sprayer	holding shield	gold helmet	lava bucket
Lizzie	iron hoe	firework crossbow	holding shield	iron helmet	lava bucket
Joel	diamond shovel	tnt launcher	holding shield	iron helmet	soul sand
Alex	golden axe	ender pearl staff	holding shield	gold helmet	water splash
PearlescentMoon	golden axe	ender pearl staff	holding torch	iron helmet	water splash
ZombieCleo	stone sword	slimeball slinger	holding torch	iron helmet	lava bucket
Notch	iron hoe	tnt launcher	holding shield	turtle shell	soul sand
BadBoyHalo	golden axe	tnt launcher	holding torch	turtle shell	soul sand

CLUE 1 Percentages

The museum security system is rebooting. We need to calculate what percentage of the backup file is done loading so we can see the camera feed.

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

[illegible]

10% of 420 = $\rightarrow$ **T**

10% of 300 = $\rightarrow$ **M**

20% of 90 = $\rightarrow$ **L**

25% of 112 = $\rightarrow$ **B**

50% of 86 = → **D**

20% of 5 = $\rightarrow$ **R**

50% of 88 = $\rightarrow$ **S**

10% of 30 = → **F**

10% of 70 = $\rightarrow$ **A**

20% of 170 = $\rightarrow$ **0**

10% of 200 = $\rightarrow$ **E**

40% of 60 = $\rightarrow$ **G**

40% of 20 = $\rightarrow$ **I**

10% of 120 = $\rightarrow$ **N**

25% of 92 = $\rightarrow$ **H**

20% of 65 = $\rightarrow$ **U**

Scratch space:

CLUE 2 Exponents

The thief duplicated blocks to climb the wall. Let's solve this exponential block growth puzzle to find out how high they jumped.

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

T													T	
49	125	32	36	289	25	128	64	128	27	196	32	9	49	128

T								T								T
49	36	128	256	196	216	9	49	216	36	324	125	196	256	144	125	49

$7^2 = \square \rightarrow$ T	$17^2 = \square \rightarrow$ U	$18^2 = \square \rightarrow$ C	$12^2 = \square \rightarrow$ G
$2^5 = \square \rightarrow$ E	$3^2 = \square \rightarrow$ F	$6^3 = \square \rightarrow$ O	$3^3 = \square \rightarrow$ Y
$14^2 = \square \rightarrow$ L	$4^3 = \square \rightarrow$ W	$5^2 = \square \rightarrow$ N	$16^2 = \square \rightarrow$ I
$6^2 = \square \rightarrow$ R	$2^7 = \square \rightarrow$ A	$5^3 = \square \rightarrow$ H	

Scratch space:

CLUE 3

Order of operations

To unlock the crafting table chest, we must follow the recipe steps in the exact correct order of operations.

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

$$25 + 5 \times 3 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$4 \times 11 - 14 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$9 \times 6 - 19 = \boxed{} \rightarrow \boxed{\text{L}}$$

$8 \times 4 - 4 = \boxed{} \rightarrow \boxed{\mathbf{B}}$

$4 + 5 \times 9 = \boxed{} \rightarrow \boxed{\text{C}}$

$$4 + 2 \times 2 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$28 + 2 \times 5 = \boxed{} \rightarrow \boxed{\text{K}}$$

$$44 + 9 \times 4 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$9 + 3 \times 3 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$31 + 9 \times 3 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$17 + 6 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{M}}$$

$$8 + 2 \times 9 = \boxed{} \rightarrow \boxed{0}$$

$10 \times 9 - 11 = \boxed{} \rightarrow \boxed{\text{H}}$

$10 \times 8 - 10 = \boxed{} \rightarrow \boxed{\text{E}}$

$$3 + 5 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$7 \times 8 - 6 = \boxed{} \rightarrow \boxed{\text{U}}$$

$15 + 3 \times 8 = \square \rightarrow \boxed{\mathbf{A}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

We found stacks of stolen emeralds arranged in rows and columns. Multiply the grid size to count them up quickly.

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

S														
40	55	60	14	15	108	9	10	15	90	10	45	28	72	

S																		
40	18	9	28	45	18	55	10	21	45	55	10	18	10	60	72	60	14	108

$5 \times 8 = \square \rightarrow \boxed{\text{S}}$

$7 \times 2 = \square \rightarrow \boxed{\text{N}}$

$5 \times 9 = \square \rightarrow \boxed{\text{T}}$

$3 \times 6 = \square \rightarrow \boxed{\text{C}}$

$11 \times 5 = \square \rightarrow \boxed{\text{H}}$

$3 \times 5 = \square \rightarrow \boxed{\text{Y}}$

$3 \times 3 = \square \rightarrow \boxed{\text{R}}$

$4 \times 7 = \square \rightarrow \boxed{\text{A}}$

$10 \times 1 = \square \rightarrow \boxed{\text{E}}$

$12 \times 5 = \square \rightarrow \boxed{\text{I}}$

$6 \times 12 = \square \rightarrow \boxed{\text{L}}$

$9 \times 12 = \square \rightarrow \boxed{\text{G}}$

$3 \times 7 = \square \rightarrow \boxed{\text{D}}$

$9 \times 10 = \square \rightarrow \boxed{\text{M}}$

Scratch space:

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

The local villagers want to divide their remaining bread equally. Solve the sharing problem to get their help.

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:

$24 \div 4 = \boxed{}$

$36 \div 4 = \boxed{}$

$33 \div 3 = \boxed{}$

$5 \div 1 = \boxed{}$

$72 \div 6 = \boxed{}$

$8 \div 2 = \boxed{}$

$30 \div 3 = \boxed{}$

$48 \div 6 = \boxed{}$

$33 \div 11 = \boxed{}$

$4 \div 4 = \boxed{}$

$49 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain dug a secret tunnel with a diamond shovel, then teleported away using an ender pearl staff.
2. The villain tilled the farm to sneak in with an iron hoe, then shot colorful sparks with a firework crossbow.
3. The villain dug a secret tunnel with a diamond shovel, then blasted the floor with a tnt launcher.
4. The villain tilled the farm to sneak in with an iron hoe, then dropped sticky gas with a potion sprayer.
5. The villain tilled the farm to sneak in with an iron hoe, then blasted the floor with a tnt launcher.
6. The villain mined through the wall with a netherite pickaxe, then shot colorful sparks with a firework crossbow.
7. The villain chopped down the wooden door with a golden axe, then dropped sticky gas with a potion sprayer.
8. The villain dug a secret tunnel with a diamond shovel, then bounced over the wall with a slimeball slinger.
9. The villain chopped down the wooden door with a golden axe, then teleported away using an ender pearl staff.
10. The villain slashed the cobwebs with a stone sword, then dropped sticky gas with a potion sprayer.
11. The villain chopped down the wooden door with a golden axe, then shot colorful sparks with a firework crossbow.
12. The villain tilled the farm to sneak in with an iron hoe, then bounced over the wall with a slimeball slinger.

Answer Key

The Great Museum Grief

Culprit: Tango

iron hoe · firework crossbow · holding torch · iron helmet · lava bucket

Trail: Start 21 → Clue 1 17 → Clue 2 8 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE GRIEFER DOES NOT USE THE SLIMEBALL SLINGER"

10% of 420 = 42 (T) · 10% of 300 = 30 (M) · 20% of 90 = 18 (L) · 25% of 112 = 28 (B) · 50% of 86 = 43 (D) · 20% of 5 = 1 (R) · 50% of 88 = 44 (S) · 10% of 30 = 3 (F) · 10% of 70 = 7 (A) · 20% of 170 = 34 (O) · 10% of 200 = 20 (E) · 40% of 60 = 24 (G) · 40% of 20 = 8 (I) · 10% of 120 = 12 (N) · 25% of 92 = 23 (H) · 20% of 65 = 13 (U)

Clue 2 (Exponents): "THE RUNAWAY LEFT A TRAIL OF TORCH LIGHT"

$7^2 = 49$ (T) · $17^2 = 289$ (U) · $18^2 = 324$ (C) · $12^2 = 144$ (G) · $2^5 = 32$ (E) · $3^2 = 9$ (F) · $6^3 = 216$ (O) · $3^3 = 27$ (Y) · $14^2 = 196$ (L) · $4^3 = 64$ (W) · $5^2 = 25$ (N) · $16^2 = 256$ (I) · $6^2 = 36$ (R) · $2^7 = 128$ (A) · $5^3 = 125$ (H)

Clue 3 (Order of operations): "THEY RAN AWAY FROM A HOT LAVA BUCKET"

$25 + 5 \times 3 = 40$ (T) · $4 \times 11 - 14 = 30$ (R) · $9 \times 6 - 19 = 35$ (L) · $8 \times 4 - 4 = 28$ (B) · $4 + 5 \times 9 = 49$ (C) · $4 + 2 \times 2 = 8$ (N) · $28 + 2 \times 5 = 38$ (K) · $44 + 9 \times 4 = 80$ (Y) · $9 + 3 \times 3 = 18$ (F) · $31 + 9 \times 3 = 58$ (W) · $17 + 6 \times 2 = 29$ (M) · $8 + 2 \times 9 = 26$ (O) · $10 \times 9 - 11 = 79$ (H) · $10 \times 8 - 10 = 70$ (E) · $3 + 5 \times 2 = 13$ (V) · $7 \times 8 - 6 = 50$ (U) · $15 + 3 \times 8 = 39$ (A)

Clue 4 (Multiplication facts (1-12)): "SHINY GREY METAL SCRATCHED THE CEILING"

$5 \times 8 = 40$ (S) · $7 \times 2 = 14$ (N) · $5 \times 9 = 45$ (T) · $3 \times 6 = 18$ (C) · $11 \times 5 = 55$ (H) · $3 \times 5 = 15$ (Y) · $3 \times 3 = 9$ (R) · $4 \times 7 = 28$ (A) · $10 \times 1 = 10$ (E) · $12 \times 5 = 60$ (I) · $6 \times 12 = 72$ (L) · $9 \times 12 = 108$ (G) · $3 \times 7 = 21$ (D) · $9 \times 10 = 90$ (M)

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

$24 \div 4 = 6$ · $36 \div 4 = 9$ · $33 \div 3 = 11$ · $5 \div 1 = 5$ · $72 \div 6 = 12$ · $8 \div 2 = 4$ · $30 \div 3 = 10$ · $48 \div 6 = 8$ · $33 \div 11 = 3$ · $4 \div 4 = 1$ · $49 \div 7 = 7$