



The Case of the Vanished Chronos Hourglass

Grade 5 math · Multiplication, Fractions of a number, Order of operations, Rounding · Reading level grades 5-6

Detective: _____ Date: _____

The Grand Academy of Arcanum is in an uproar! The precious Chronos Hourglass has been swiped from the central vault. Headmaster Alistair needs your help. A rogue illusionist is behind the heist, and they have left a trail of magical runes behind. Decode the clues, check the suspect list, and save the academy's timeline before it's too late!

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 illusionist 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	MAGIC ITEM	CASTING HAND	HAIR DYE	COUNTER MAGIC
Cedric Diggory	conjuring	glowing amulet	left handed caster	sparkling silver hair	cold iron charms
Sybill Trelawney	mind reading	crystal staff	left handed caster	burning copper hair	anti magic dust
Morgan le Fay	levitation	silver wand	right handed caster	deep purple hair	starlight mirrors
Minerva McGonagall	mind reading	shadow boots	right handed caster	burning copper hair	starlight mirrors
John Dee	teleportation	invisibility cloak	right handed caster	deep purple hair	cold iron charms
Ursula Le Guin	mind reading	glowing amulet	right handed caster	sparkling silver hair	starlight mirrors
Ged Earthsea	levitation	shadow boots	right handed caster	sparkling silver hair	starlight mirrors
Nymphadora Tonks	levitation	glowing amulet	left handed caster	deep purple hair	starlight mirrors
Fleur Delacour	mind reading	crystal staff	left handed caster	sparkling silver hair	starlight mirrors
Hermione Granger	pyromancy	shadow boots	left handed caster	burning copper hair	starlight mirrors
Garrick Ollivander	teleportation	glowing amulet	right handed caster	deep purple hair	starlight mirrors
Arthur Pendragon	pyromancy	invisibility cloak	left handed caster	deep purple hair	anti magic dust
Prospero Duke	teleportation	silver wand	right handed caster	burning copper hair	cold iron charms
Merlin Ambrosius	teleportation	silver wand	right handed caster	sparkling silver hair	cold iron charms
Harry Houdini	teleportation	shadow boots	left handed caster	deep purple hair	cold iron charms
Severus Snape	pyromancy	glowing amulet	left handed caster	deep purple hair	starlight mirrors
Remus Lupin	pyromancy	crystal staff	right handed caster	deep purple hair	starlight mirrors
Marie Laveau	pyromancy	shadow boots	right handed caster	deep purple hair	starlight mirrors
Nicholas Flamel	conjuring	shadow boots	right handed caster	deep purple hair	starlight mirrors
Diana Wynne	levitation	invisibility cloak	left handed caster	sparkling silver hair	cold iron charms
Gwen Jones	conjuring	glowing amulet	right handed caster	burning copper hair	anti magic dust

CLUE 1

Multiplication facts (1-12)

You find a spellbook with magic runes arranged in neat rows. To count the symbols quickly, you group them together.

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

T			T											T				
121	7	56	121	7	4	56	90	96	33	56	18	110	33	121	64	18	56	14
				T				T										
144	28	54	18	121	14	108	18	121	14	90	90							

$11 \times 11 = \square \rightarrow \boxed{\text{T}}$

$12 \times 8 = \square \rightarrow \boxed{\text{D}}$

$2 \times 2 = \square \rightarrow \boxed{\text{I}}$

$7 \times 8 = \square \rightarrow \boxed{\text{E}}$

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

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

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

$12 \times 12 = \square \rightarrow \boxed{\text{C}}$

$7 \times 1 = \square \rightarrow \boxed{\text{H}}$

$11 \times 3 = \square \rightarrow \boxed{\text{O}}$

$6 \times 9 = \square \rightarrow \boxed{\text{Y}}$

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

$8 \times 8 = \square \rightarrow \boxed{\text{U}}$

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

$10 \times 11 = \square \rightarrow \boxed{\text{N}}$

Scratch space:

CLUE 2
Fractions of a number

To reveal the next clue, you must pour a precise fraction of a glowing blue potion into the stone basin.

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

T																		
15	2	20	19	23	3	29	9	28	37	10	20	29	39	35	30	7	20	6
				T										T				
35	19	10	2	15	2	6	23	37	20	37	13	6	29	15	20	35		

$3/10 \text{ of } 50 = \square \rightarrow \text{ T }$

$2/8 \text{ of } 116 = \square \rightarrow \text{ S }$

$5/10 \text{ of } 46 = \square \rightarrow \text{ N }$

$4/10 \text{ of } 50 = \square \rightarrow \text{ E }$

$1/2 \text{ of } 18 = \square \rightarrow \text{ M }$

$2/4 \text{ of } 70 = \square \rightarrow \text{ R }$

$1/6 \text{ of } 78 = \square \rightarrow \text{ C }$

$3/6 \text{ of } 74 = \square \rightarrow \text{ D }$

$3/10 \text{ of } 100 = \square \rightarrow \text{ O }$

$1/2 \text{ of } 56 = \square \rightarrow \text{ U }$

$1/3 \text{ of } 6 = \square \rightarrow \text{ H }$

$3/6 \text{ of } 38 = \square \rightarrow \text{ I }$

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

$2/8 \text{ of } 156 = \square \rightarrow \text{ P }$

$1/5 \text{ of } 50 = \square \rightarrow \text{ G }$

$7/10 \text{ of } 10 = \square \rightarrow \text{ V }$

$2/10 \text{ of } 30 = \square \rightarrow \text{ A }$

Scratch space:

CLUE 3

Order of operations

A magical lock requires pressing the brass buttons in the exact order of the academy's ancient laws.

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

T																		
63	33	20	77	43	35	35	20	77	49	30	54	35	62	42	65	74	20	74
			T							T								
35	39	54	63	30	77	62	42	69	33	63	34	42	77	77	43	77	54	

$15 + 6 \times 8 = \square \rightarrow \text{T}$

$3 + 5 \times 6 = \square \rightarrow \text{H}$

$12 \times 4 - 18 = \square \rightarrow \text{A}$

$4 + 7 \times 5 = \square \rightarrow \text{Y}$

$7 \times 11 - 12 = \square \rightarrow \text{N}$

$6 \times 9 - 19 = \square \rightarrow \text{B}$

$31 + 4 \times 3 = \square \rightarrow \text{O}$

$8 \times 12 - 22 = \square \rightarrow \text{D}$

$22 + 3 \times 4 = \square \rightarrow \text{M}$

$13 + 6 \times 6 = \square \rightarrow \text{W}$

$5 \times 11 - 1 = \square \rightarrow \text{S}$

$10 \times 3 - 10 = \square \rightarrow \text{E}$

$50 + 3 \times 9 = \square \rightarrow \text{R}$

$22 + 4 \times 5 = \square \rightarrow \text{I}$

$8 \times 10 - 18 = \square \rightarrow \text{L}$

$10 \times 9 - 21 = \square \rightarrow \text{G}$

Scratch space:

CLUE 4 Rounding

A foggy crystal ball shows a blurry number that you must round to the nearest ten to get a clear image.

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

A																
2900	500	200	2000	90	430	1300	3000	1300	1300	20	20	4300	170	20	430	1300
	A				A											
2300	2900	200	170	110	2900	500	430	1300	3700	300	5000	1300	2300	200	2000	3000

Round 2,923 to the nearest hundred → **A**

Round 432 to the nearest ten → **L**

Round 3,654 to the nearest hundred → **F**

Round 2,776 to the nearest thousand → **D**

Round 177 to the nearest hundred → **I**

Round 549 to the nearest hundred → **S**

Round 113 to the nearest ten → **W**

Round 5,466 to the nearest thousand → **B**

Round 167 to the nearest ten → **R**

Round 2,303 to the nearest hundred → **H**

Round 21 to the nearest ten → **P**

Round 4,339 to the nearest hundred → **U**

Round 2,225 to the nearest thousand → **N**

Round 1,272 to the nearest hundred → **E**

Round 276 to the nearest hundred → **T**

Round 90 to the nearest ten → **G**

Scratch space:

CLUE 5**Fractions of a number - the last clue**

To crack the final seal, you take a fraction of the enchanted cards strewn across the laboratory table.

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:

$1/8 \text{ of } 96 = \boxed{}$

$5/10 \text{ of } 10 = \boxed{}$

$5/10 \text{ of } 14 = \boxed{}$

$4/5 \text{ of } 10 = \boxed{}$

$2/5 \text{ of } 10 = \boxed{}$

$2/10 \text{ of } 5 = \boxed{}$

$1/4 \text{ of } 8 = \boxed{}$

$1/3 \text{ of } 30 = \boxed{}$

$3/4 \text{ of } 12 = \boxed{}$

$2/6 \text{ of } 33 = \boxed{}$

$3/10 \text{ of } 20 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain melted the lock with bright pyromancy, then tapped the stone floor with a crystal staff.
2. The villain conjured a giant key out of thin air, then tapped the stone floor with a crystal staff.
3. The villain melted the lock with bright pyromancy, then slipped into the darkness with shadow boots.
4. The villain conjured a giant key out of thin air, then faded away using an invisibility cloak.
5. The villain conjured a giant key out of thin air, then slipped into the darkness with shadow boots.
6. The villain conjured a giant key out of thin air, then unlocked the secure cabinet using a silver wand.
7. The villain teleported past the heavy oak doors, then blinded the security gargoyle with a glowing amulet.
8. The villain conjured a giant key out of thin air, then blinded the security gargoyle with a glowing amulet.
9. The villain levitated across the high vaulted ceiling, then tapped the stone floor with a crystal staff.
10. The villain melted the lock with bright pyromancy, then unlocked the secure cabinet using a silver wand.
11. The villain teleported past the heavy oak doors, then slipped into the darkness with shadow boots.
12. The villain levitated across the high vaulted ceiling, then unlocked the secure cabinet using a silver wand.

Answer Key

The Case of the Vanished Chronos Hourglass

Culprit: Marie Laveau

pyromancy · shadow boots · right handed caster · deep purple hair · starlight mirrors

Trail: Start 21 → Clue 1 18 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE THIEF DOES NOT USE A CRYSTAL STAFF"

$11 \times 11 = 121$ (T) · $12 \times 8 = 96$ (D) · $2 \times 2 = 4$ (I) · $7 \times 8 = 56$ (E) · $10 \times 9 = 90$ (F) · $4 \times 7 = 28$ (R) · $12 \times 9 = 108$ (L) · $12 \times 12 = 144$ (C) · $7 \times 1 = 7$ (H) · $11 \times 3 = 33$ (O) · $6 \times 9 = 54$ (Y) · $7 \times 2 = 14$ (A) · $8 \times 8 = 64$ (U) · $6 \times 3 = 18$ (S) · $10 \times 11 = 110$ (N)

Clue 2 (Fractions of a number): "THE INK SMUDGES PROVE A RIGHT HANDED CASTER"

$3/10$ of 50 = 15 (T) · $2/8$ of 116 = 29 (S) · $5/10$ of 46 = 23 (N) · $4/10$ of 50 = 20 (E) · $1/2$ of 18 = 9 (M) · $2/4$ of 70 = 35 (R) · $1/6$ of 78 = 13 (C) · $3/6$ of 74 = 37 (D) · $3/10$ of 100 = 30 (O) · $1/2$ of 56 = 28 (U) · $1/3$ of 6 = 2 (H) · $3/6$ of 38 = 19 (I) · $4/8$ of 6 = 3 (K) · $2/8$ of 156 = 39 (P) · $1/5$ of 50 = 10 (G) · $7/10$ of 10 = 7 (V) · $2/10$ of 30 = 6 (A)

Clue 3 (Order of operations): "THE ROBBER WAS BLINDED BY STARLIGHT MIRRORS"

$15 + 6 \times 8 = 63$ (T) · $3 + 5 \times 6 = 33$ (H) · $12 \times 4 - 18 = 30$ (A) · $4 + 7 \times 5 = 39$ (Y) · $7 \times 11 - 12 = 65$ (N) · $6 \times 9 - 19 = 35$ (B) · $31 + 4 \times 3 = 43$ (O) · $8 \times 12 - 22 = 74$ (D) · $22 + 3 \times 4 = 34$ (M) · $13 + 6 \times 6 = 49$ (W) · $5 \times 11 - 1 = 54$ (S) · $10 \times 3 - 10 = 20$ (E) · $50 + 3 \times 9 = 77$ (R) · $22 + 4 \times 5 = 42$ (I) · $8 \times 10 - 18 = 62$ (L) · $10 \times 9 - 21 = 69$ (G)

Clue 4 (Rounding): "A SINGLE DEEP PURPLE HAIR WAS LEFT BEHIND"

Round 2,923 to the nearest hundred = 2900 (A) · Round 432 to the nearest ten = 430 (L) · Round 3,654 to the nearest hundred = 3700 (F) · Round 2,776 to the nearest thousand = 3000 (D) · Round 177 to the nearest hundred = 200 (I) · Round 549 to the nearest hundred = 500 (S) · Round 113 to the nearest ten = 110 (W) · Round 5,466 to the nearest thousand = 5000 (B) · Round 167 to the nearest ten = 170 (R) · Round 2,303 to the nearest hundred = 2300 (H) · Round 21 to the nearest ten = 20 (P) · Round 4,339 to the nearest hundred = 4300 (U) · Round 2,225 to the nearest thousand = 2000 (N) · Round 1,272 to the nearest hundred = 1300 (E) · Round 276 to the nearest hundred = 300 (T) · Round 90 to the nearest ten = 90 (G)

Clue 5 (Fractions of a number): surviving statement is box 3 → Marie Laveau

$1/8$ of 96 = 12 · $5/10$ of 10 = 5 · $5/10$ of 14 = 7 · $4/5$ of 10 = 8 · $2/5$ of 10 = 4 · $2/10$ of 5 = 1 · $1/4$ of 8 = 2 · $1/3$ of 30 = 10 · $3/4$ of 12 = 9 · $2/6$ of 33 = 11 · $3/10$ of 20 = 6