The Halloween Pumpkin Phantom

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The Master Glowing Pumpkin disappeared right before the Spooksville Midnight Parade! Detective, use the clues to catch the culprit and save the celebration.

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 Pumpkin Phantom is _____

Possible suspects

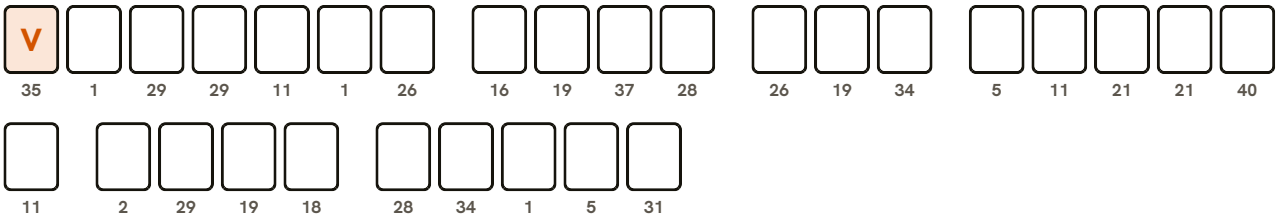
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	COSTUME DISGUISE	SPOOKY GEAR	CARRIED BAG HAND	WIG COLOR	TRICK COUNTER
Sally Brown	Zombie Suit	Glow Stick	Right Handed	Neon Orange Wig	Bright Flashlight
Boris Karloff	Witch Hat	Fog Machine	Left Handed	Midnight Black Wig	Bright Flashlight
Casper Friendly	Skeleton Suit	Lantern Torch	Left Handed	Slime Green Wig	Garlic Breath
Elvira Mistress	Mummy Wraps	Glow Stick	Left Handed	Slime Green Wig	Bright Flashlight
Patty Peppermint	Vampire Cape	Lantern Torch	Right Handed	Neon Orange Wig	Garlic Breath
Jack Skellington	Witch Hat	Candy Bucket	Left Handed	Slime Green Wig	Salt Powder
Victor Frankenstein	Zombie Suit	Spider Ring	Left Handed	Midnight Black Wig	Salt Powder
Lily Munster	Witch Hat	Fog Machine	Right Handed	Slime Green Wig	Salt Powder
Igor Assistant	Skeleton Suit	Spider Ring	Right Handed	Neon Orange Wig	Bright Flashlight
Pugsley Addams	Zombie Suit	Fog Machine	Left Handed	Midnight Black Wig	Bright Flashlight
Wednesday Addams	Zombie Suit	Glow Stick	Right Handed	Midnight Black Wig	Garlic Breath
Herman Munster	Zombie Suit	Spider Ring	Left Handed	Slime Green Wig	Bright Flashlight
Marcie Carlin	Zombie Suit	Lantern Torch	Left Handed	Slime Green Wig	Bright Flashlight
Lon Chaney	Mummy Wraps	Lantern Torch	Left Handed	Slime Green Wig	Bright Flashlight
Sabrina Spellman	Vampire Cape	Fog Machine	Right Handed	Midnight Black Wig	Garlic Breath
Grandpa Munster	Vampire Cape	Lantern Torch	Left Handed	Slime Green Wig	Salt Powder
Linus VanPelt	Mummy Wraps	Candy Bucket	Left Handed	Neon Orange Wig	Salt Powder
Vincent Price	Witch Hat	Fog Machine	Left Handed	Slime Green Wig	Bright Flashlight
Charlie Brown	Witch Hat	Spider Ring	Right Handed	Neon Orange Wig	Garlic Breath
Gomez Addams	Skeleton Suit	Spider Ring	Right Handed	Slime Green Wig	Bright Flashlight
Wendy Witch	Witch Hat	Fog Machine	Right Handed	Slime Green Wig	Bright Flashlight

CLUE 1 Percentages

> The bakery register printed a receipt with percentage discounts for Halloween treats, revealing who did not carry glowing gear.

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



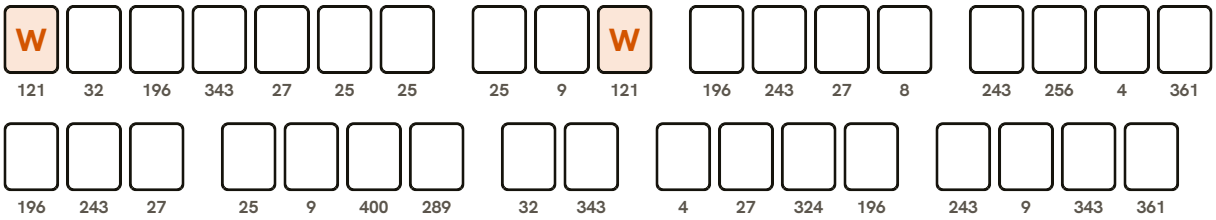
5% of 700 = ☐ → V	10% of 340 = ☐ → T	20% of 10 = ☐ → G
5% of 580 = ☐ → L	10% of 10 = ☐ → I	25% of 112 = ☐ → S
20% of 55 = ☐ → A	25% of 84 = ☐ → R	25% of 64 = ☐ → D
20% of 130 = ☐ → N	25% of 20 = ☐ → C	75% of 24 = ☐ → W
50% of 80 = ☐ → Y	25% of 148 = ☐ → E	10% of 310 = ☐ → K
25% of 76 = ☐ → O		

Scratch space:

CLUE 2 Exponents

> The haunted manor security panel uses power exponents to calculate footsteps, narrowing down which hand carried the sack.

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



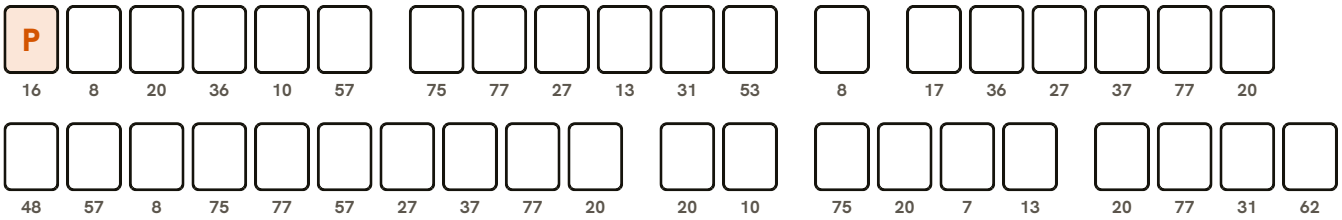
11^2 = ☐ → W	17^2 = ☐ → K	3^3 = ☐ → E	2^2 = ☐ → L
3^2 = ☐ → A	5^2 = ☐ → S	19^2 = ☐ → D	3^5 = ☐ → H
14^2 = ☐ → T	7^3 = ☐ → N	2^5 = ☐ → I	20^2 = ☐ → C
18^2 = ☐ → F	2^3 = ☐ → M	2^8 = ☐ → O	

Scratch space:

CLUE 3 Order of operations

Solving the order of operations riddle on the gate padlock uncovers a clue about how the thief was scared away.

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



4 + 4 × 3 = ☐ → P

9 × 6 - 27 = ☐ → I

5 + 3 × 5 = ☐ → T

20 + 7 × 4 = ☐ → F

10 × 7 - 17 = ☐ → D

4 + 3 × 2 = ☐ → O

7 × 5 - 4 = ☐ → E

2 + 2 × 3 = ☐ → A

65 + 3 × 4 = ☐ → H

1 + 4 × 3 = ☐ → N

12 × 2 - 7 = ☐ → B

21 + 6 × 9 = ☐ → S

39 + 9 × 2 = ☐ → L

44 + 3 × 6 = ☐ → M

10 × 6 - 23 = ☐ → G

28 + 2 × 4 = ☐ → R

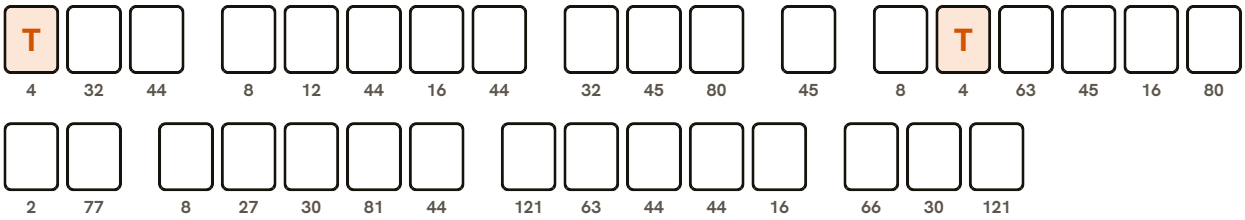
2 × 5 - 3 = ☐ → U

Scratch space:

CLUE 4 Multiplication facts (1-12)

> Multiplying the rows of pumpkin displays in the grand hall yields the secret code for a clue about the hair left behind.

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



1 × 4 = ☐ → T	6 × 11 = ☐ → W	9 × 9 = ☐ → M	3 × 9 = ☐ → L
2 × 1 = ☐ → O	3 × 4 = ☐ → C	8 × 10 = ☐ → D	4 × 4 = ☐ → N
10 × 3 = ☐ → I	5 × 9 = ☐ → A	11 × 4 = ☐ → E	
9 × 7 = ☐ → R	2 × 4 = ☐ → S	4 × 8 = ☐ → H	
11 × 11 = ☐ → G	11 × 7 = ☐ → F		

Scratch space:

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

Dividing total candy corns evenly among the patrol officers unlocks the final clue board.

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:

120 ÷ 12 = ☐ 54 ÷ 9 = ☐ 121 ÷ 11 = ☐ 20 ÷ 4 = ☐ 35 ÷ 5 = ☐

12 ÷ 4 = ☐ 18 ÷ 2 = ☐ 44 ÷ 11 = ☐ 12 ÷ 1 = ☐ 8 ÷ 8 = ☐

16 ÷ 2 = ☐

Step 2 - cross out the sentence with each answer:

1. The villain shuffled in a zombie suit, then cranked up a smoky fog machine.
2. The villain shuffled in a zombie suit, then swung a carved lantern torch.
3. The villain rattled in a skeleton suit, then swung a carved lantern torch.
4. The villain unraveled dusty mummy wraps, then cracked open a bright glow stick.
5. The villain rattled in a skeleton suit, then flashed a shiny spider ring.
6. The villain shuffled in a zombie suit, then flashed a shiny spider ring.
7. The villain shuffled in a zombie suit, then scooped up a huge candy bucket.
8. The villain swished a dark vampire cape, then cracked open a bright glow stick.
9. The villain rattled in a skeleton suit, then scooped up a huge candy bucket.
10. The villain unraveled dusty mummy wraps, then swung a carved lantern torch.
11. The villain tipped a pointy witch hat, then cranked up a smoky fog machine.
12. The villain swished a dark vampire cape, then flashed a shiny spider ring.

TEACHER / PARENT

Answer Key

The Halloween Pumpkin Phantom

Culprit: Marcie Carlin

Zombie Suit · Lantern Torch · Left Handed · Slime Green Wig · Bright Flashlight

Trail: Start 21 → Clue 1 18 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "VILLAIN DOES NOT CARRY A GLOW STICK"

5% of 700 = 35 (V) · 10% of 340 = 34 (T) · 20% of 10 = 2 (G) · 5% of 580 = 29 (L) · 10% of 10 = 1 (I) · 25% of 112 = 28 (S) · 20% of 55 = 11 (A) · 25% of 84 = 21 (R) · 25% of 64 = 16 (D) · 20% of 130 = 26 (N) · 25% of 20 = 5 (C) · 75% of 24 = 18 (W) · 50% of 80 = 40 (Y) · 25% of 148 = 37 (E) · 10% of 310 = 31 (K) · 25% of 76 = 19 (O)

Clue 2 (Exponents): "WITNESS SAW THEM HOLD THE SACK IN LEFT HAND"

11^2 = 121 (W) · 17^2 = 289 (K) · 3^3 = 27 (E) · 2^2 = 4 (L) · 3^2 = 9 (A) · 5^2 = 25 (S) · 19^2 = 361 (D) · 3^5 = 243 (H) · 14^2 = 196 (T) · 7^3 = 343 (N) · 2^5 = 32 (I) · 20^2 = 400 (C) · 18^2 = 324 (F) · 2^3 = 8 (M) · 2^8 = 256 (O)

Clue 3 (Order of operations): "PATROL SHINED A BRIGHT FLASHLIGHT TO STUN THEM"

4 + 4 × 3 = 16 (P) · 9 × 6 - 27 = 27 (I) · 5 + 3 × 5 = 20 (T) · 20 + 7 × 4 = 48 (F) · 10 × 7 - 17 = 53 (D) · 4 + 3 × 2 = 10 (O) · 7 × 5 - 4 = 31 (E) · 2 + 2 × 3 = 8 (A) · 65 + 3 × 4 = 77 (H) · 1 + 4 × 3 = 13 (N) · 12 × 2 - 7 = 17 (B) · 21 + 6 × 9 = 75 (S) · 39 + 9 × 2 = 57 (L) · 44 + 3 × 6 = 62 (M) · 10 × 6 - 23 = 37 (G) · 28 + 2 × 4 = 36 (R) · 2 × 5 - 3 = 7 (U)

Clue 4 (Multiplication facts (1-12)): "THE SCENE HAD A STRAND OF SLIME GREEN WIG"

1 × 4 = 4 (T) · 6 × 11 = 66 (W) · 9 × 9 = 81 (M) · 3 × 9 = 27 (L) · 2 × 1 = 2 (O) · 3 × 4 = 12 (C) · 8 × 10 = 80 (D) · 4 × 4 = 16 (N) · 10 × 3 = 30 (I) · 5 × 9 = 45 (A) · 11 × 4 = 44 (E) · 9 × 7 = 63 (R) · 2 × 4 = 8 (S) · 4 × 8 = 32 (H) · 11 × 11 = 121 (G) · 11 × 7 = 77 (F)

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

120 ÷ 12 = 10 · 54 ÷ 9 = 6 · 121 ÷ 11 = 11 · 20 ÷ 4 = 5 · 35 ÷ 5 = 7 · 12 ÷ 4 = 3 · 18 ÷ 2 = 9 · 44 ÷ 11 = 4 · 12 ÷ 1 = 12 · 8 ÷ 8 = 1 · 16 ÷ 2 = 8