



The Concert Crasher Caper

Grade 6 math · Addition, Percentages, Exponents, Order of operations, Division · Reading level grades 7-9

Detective: _____ Date: _____

Minutes before tonight sold out arena show someone sabotaged the main stage sound system and fled into the backstage corridors. Solve the math clues left behind to identify the concert crasher before the encore.

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 Concert Crasher is _____

Possible suspects

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

NAME	SIGNATURE OUTFIT	STAGE EFFECT	MIC GRIP	HAIRSTYLE	WARMUP ROUTINE
Stevie Nicks	Feather Boa	Laser Beam	Left Handed Grip	Curly Brunette	Vocal Trills
Camila Cabello	Sequined Jumpsuit	Laser Beam	Left Handed Grip	Wavy Auburn	Lemon Water
Zayn Malik	Floral Kimono	Laser Beam	Right Handed Grip	Slicked Black	Lemon Water
Florence Welch	Sequined Jumpsuit	Fog Machine	Left Handed Grip	Slicked Black	Lemon Water
Sarah Jones	Floral Kimono	Confetti Cannon	Left Handed Grip	Slicked Black	Harmonica
Mitch Rowland	Floral Kimono	Fog Machine	Left Handed Grip	Slicked Black	Harmonica
Adele Adkins	Sequined Jumpsuit	Pyrotechnic Spark	Left Handed Grip	Wavy Auburn	Harmonica
Jack Antonoff	Pink Velvet Suit	Spotlight Beam	Left Handed Grip	Curly Brunette	Lemon Water
Taylor Swift	Glitter Suspenders	Laser Beam	Right Handed Grip	Curly Brunette	Harmonica
Clare Uchima	Glitter Suspenders	Confetti Cannon	Left Handed Grip	Slicked Black	Lemon Water
Billie Eilish	Feather Boa	Fog Machine	Left Handed Grip	Slicked Black	Vocal Trills
Niall Horan	Floral Kimono	Fog Machine	Left Handed Grip	Slicked Black	Lemon Water
Shawn Mendes	Glitter Suspenders	Laser Beam	Right Handed Grip	Wavy Auburn	Lemon Water
Harry Styles	Floral Kimono	Pyrotechnic Spark	Left Handed Grip	Wavy Auburn	Vocal Trills
Kacey Musgraves	Sequined Jumpsuit	Pyrotechnic Spark	Right Handed Grip	Slicked Black	Harmonica
Dua Lipa	Sequined Jumpsuit	Pyrotechnic Spark	Left Handed Grip	Slicked Black	Lemon Water
Pauli Lovejoy	Glitter Suspenders	Confetti Cannon	Right Handed Grip	Slicked Black	Lemon Water
Olivia Rodrigo	Sequined Jumpsuit	Fog Machine	Left Handed Grip	Curly Brunette	Lemon Water
Lizzo	Feather Boa	Spotlight Beam	Left Handed Grip	Slicked Black	Harmonica
Louis Tomlinson	Sequined Jumpsuit	Spotlight Beam	Left Handed Grip	Slicked Black	Lemon Water
Bruno Mars	Pink Velvet Suit	Confetti Cannon	Left Handed Grip	Slicked Black	Lemon Water

CLUE 1 Addition

To reveal the first secret note sum up the total backstage passes distributed across the main security gates.

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

6920 4814 2354 4942 5262 8735 7409 6920 2354 7617 9104 3099 2249 3099 7554 7409 6920

7617 4942 2354 5262 7043 7409 6359 5180 5262 2330 4814 2249 7554 2354

$$4030 + 2890 = \boxed{} \rightarrow \boxed{\text{T}}$$

$1311 + 1788 = \boxed{} \rightarrow \boxed{\text{D}}$

$$3859 + 3550 = \boxed{} \rightarrow \boxed{0}$$

$$3318 + 4236 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$2377 + 2885 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$3256 + 3787 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$2414 + 3945 = \boxed{} \rightarrow \mathbf{G}$$

$1542 + 812 = \boxed{} \rightarrow \boxed{\text{E}}$

$$5268 + 2349 = \boxed{} \rightarrow \boxed{\mathbf{U}}$$

$$5302 + 3802 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$3098 + 1844 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$1129 + 1201 = \boxed{} \rightarrow \boxed{\mathbf{C}}$$

$$1044 + 1205 = \boxed{} \rightarrow \boxed{}$$

$$5656 + 3079 = \boxed{} \rightarrow \boxed{\text{B}}$$

$$3420 + 1760 = \boxed{} \rightarrow \boxed{\text{M}}$$

$$2175 + 2639 = \boxed{} \rightarrow \boxed{\text{H}}$$

Scratch space:

CLUE 2

Percentages

To unlock the next clue calculate the target percentage of soundboard audio capacity used during soundcheck.

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

W									W					
24	4	11	17	31	42	42	42	32	24	32	37	31	39	11

44	32	17	45	31	45	2	4	9	10	21	4	5

$75\% \text{ of } 32 = \square \rightarrow \boxed{\text{W}}$

$50\% \text{ of } 10 = \square \rightarrow \boxed{\text{P}}$

$25\% \text{ of } 16 = \square \rightarrow \boxed{\text{I}}$

$25\% \text{ of } 8 = \square \rightarrow \boxed{\text{M}}$

$5\% \text{ of } 220 = \square \rightarrow \boxed{\text{T}}$

$50\% \text{ of } 64 = \square \rightarrow \boxed{\text{A}}$

$5\% \text{ of } 780 = \square \rightarrow \boxed{\text{F}}$

$25\% \text{ of } 148 = \square \rightarrow \boxed{\text{L}}$

$60\% \text{ of } 15 = \square \rightarrow \boxed{\text{C}}$

$20\% \text{ of } 225 = \square \rightarrow \boxed{\text{D}}$

$50\% \text{ of } 20 = \square \rightarrow \boxed{\text{G}}$

$10\% \text{ of } 310 = \square \rightarrow \boxed{\text{E}}$

$50\% \text{ of } 84 = \square \rightarrow \boxed{\text{S}}$

$10\% \text{ of } 210 = \square \rightarrow \boxed{\text{R}}$

$10\% \text{ of } 440 = \square \rightarrow \boxed{\text{H}}$

$50\% \text{ of } 34 = \square \rightarrow \boxed{\text{N}}$

Scratch space:

CLUE 3 Exponents

To decipher the third evidence log calculate the total acoustic power generated by calculating exponential amplifier gains.

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

T																		
81	225	128	324	64	169	169	4	64	9	196	4	400	256	25	64	169	128	27

									T		
125	343	169	128	121	25	9	196	4	81	128	16

$9^2 = \square \rightarrow$ T	$2^2 = \square \rightarrow$ A	$7^3 = \square \rightarrow$ Y	$14^2 = \square \rightarrow$ W
$13^2 = \square \rightarrow$ L	$3^3 = \square \rightarrow$ D	$8^2 = \square \rightarrow$ I	$5^2 = \square \rightarrow$ O
$11^2 = \square \rightarrow$ M	$18^2 = \square \rightarrow$ V	$2^7 = \square \rightarrow$ E	$2^4 = \square \rightarrow$ R
$2^8 = \square \rightarrow$ F	$20^2 = \square \rightarrow$ S	$5^3 = \square \rightarrow$ B	$3^2 = \square \rightarrow$ N
$15^2 = \square \rightarrow$ H			

Scratch space:

Order of operations

To uncover the fourth statement solve the exact order of operations needed to recalibrate the venue lighting queue.

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

Diagram illustrating a memory layout with three rows of boxes. The first row contains 20 boxes, with the 5th and 8th boxes containing the letter 'E'. The second row contains 10 boxes, and the third row contains 10 boxes. The boxes are labeled with numbers: 70, 68, 24, 30, 70, 63, 73, 70, 65, 42, 54, 69, 65, 65, 39, 24, 73, 56, 70, 30. The boxes containing 'E' are at positions 5 and 8 in the first row, and at position 19 in the second row.

$$52 + 2 \times 9 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$43 + 6 \times 4 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

$$16 + 2 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$41 + 8 \times 3 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$6 \times 10^{-18} = \boxed{} \rightarrow \boxed{\text{H}}$$

$10 \times 6 - 21 = \boxed{} \rightarrow \boxed{\text{L}}$

$$8 \times 12 - 23 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$8 \times 6 - 24 = \boxed{} \rightarrow \boxed{}$$

$$8 \times 10^{-18} = \boxed{} \rightarrow \boxed{\text{R}}$$

$$6 \times 11 - 12 = \boxed{} \rightarrow \boxed{0}$$

$$54 + 3 \times 3 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$7 \times 6 - 12 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$37 + 4 \times 8 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$47 + 3 \times 3 = \boxed{} \rightarrow \boxed{\text{K}}$$

$$54 + 7 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{v}}$$

Scratch space:

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

To solve the final clue divide the VIP gift items evenly among the backstage production crew members.

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:

$18 \div 6 = \boxed{}$

$70 \div 10 = \boxed{}$

$20 \div 10 = \boxed{}$

$54 \div 6 = \boxed{}$

$90 \div 9 = \boxed{}$

$77 \div 7 = \boxed{}$

$16 \div 4 = \boxed{}$

$60 \div 5 = \boxed{}$

$2 \div 2 = \boxed{}$

$24 \div 3 = \boxed{}$

$48 \div 8 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain snapped the glitter suspenders, then triggered the fog machine.
2. The villain wore the sequined jumpsuit, then flashed the spotlight beam.
3. The villain wore the sequined jumpsuit, then lit the pyrotechnic spark.
4. The villain sported the floral kimono, then flashed the spotlight beam.
5. The villain snapped the glitter suspenders, then fired the confetti cannon.
6. The villain sported the floral kimono, then fired the confetti cannon.
7. The villain put on the pink velvet suit, then fired the confetti cannon.
8. The villain snapped the glitter suspenders, then blasted the laser beam.
9. The villain put on the pink velvet suit, then lit the pyrotechnic spark.
10. The villain snapped the glitter suspenders, then flashed the spotlight beam.
11. The villain donned the feather boa, then blasted the laser beam.
12. The villain wore the sequined jumpsuit, then fired the confetti cannon.

Answer Key

The Concert Crasher Caper

Culprit: Clare Uchima

Glitter Suspenders · Confetti Cannon · Left Handed Grip · Slicked Black · Lemon Water

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE SABOTEUR DID NOT USE A FOG MACHINE"

$4030 + 2890 = 6920$ (T) · $1311 + 1788 = 3099$ (D) · $3859 + 3550 = 7409$ (O) · $3318 + 4236 = 7554$ (N) · $2377 + 2885 = 5262$ (A) · $3256 + 3787 = 7043$ (F) · $2414 + 3945 = 6359$ (G) · $1542 + 812 = 2354$ (E) · $5268 + 2349 = 7617$ (U) · $5302 + 3802 = 9104$ (R) · $3098 + 1844 = 4942$ (S) · $1129 + 1201 = 2330$ (C) · $1044 + 1205 = 2249$ (I) · $5656 + 3079 = 8735$ (B) · $3420 + 1760 = 5180$ (M) · $2175 + 2639 = 4814$ (H)

Clue 2 (Percentages): "WITNESS SAW A LEFT HANDED MIC GRIP"

75% of 32 = 24 (W) · 50% of 10 = 5 (P) · 25% of 16 = 4 (I) · 25% of 8 = 2 (M) · 5% of 220 = 11 (T) · 50% of 64 = 32 (A) · 5% of 780 = 39 (F) · 25% of 148 = 37 (L) · 60% of 15 = 9 (C) · 20% of 225 = 45 (D) · 50% of 20 = 10 (G) · 10% of 310 = 31 (E) · 50% of 84 = 42 (S) · 10% of 210 = 21 (R) · 10% of 440 = 44 (H) · 50% of 34 = 17 (N)

Clue 3 (Exponents): "THE VILLAIN WAS FOILED BY LEMON WATER"

$9^2 = 81$ (T) · $2^2 = 4$ (A) · $7^3 = 343$ (Y) · $14^2 = 196$ (W) · $13^2 = 169$ (L) · $3^3 = 27$ (D) · $8^2 = 64$ (I) · $5^2 = 25$ (O) · $11^2 = 121$ (M) · $18^2 = 324$ (V) · $2^7 = 128$ (E) · $2^4 = 16$ (R) · $2^8 = 256$ (F) · $20^2 = 400$ (S) · $5^3 = 125$ (B) · $3^2 = 9$ (N) · $15^2 = 225$ (H)

Clue 4 (Order of operations): "EVIDENCE SHOWS SLICKED BLACK HAIR"

$52 + 2 \times 9 = 70$ (E) · $43 + 6 \times 4 = 67$ (B) · $16 + 2 \times 2 = 20$ (A) · $41 + 8 \times 3 = 65$ (S) · $6 \times 10 - 18 = 42$ (H) · $10 \times 6 - 21 = 39$ (L) · $8 \times 12 - 23 = 73$ (C) · $8 \times 6 - 24 = 24$ (I) · $8 \times 10 - 18 = 62$ (R) · $6 \times 11 - 12 = 54$ (O) · $54 + 3 \times 3 = 63$ (N) · $7 \times 6 - 12 = 30$ (D) · $37 + 4 \times 8 = 69$ (W) · $47 + 3 \times 3 = 56$ (K) · $54 + 7 \times 2 = 68$ (V)

Clue 5 (Division facts (1-12)): surviving statement is box 5 → Clare Uchima

$18 \div 6 = 3$ · $70 \div 10 = 7$ · $20 \div 10 = 2$ · $54 \div 6 = 9$ · $90 \div 9 = 10$ · $77 \div 7 = 11$ · $16 \div 4 = 4$ · $60 \div 5 = 12$ · $2 \div 2 = 1$ · $24 \div 3 = 8$ · $48 \div 8 = 6$