



The Heist of the Paragon Diamond

Grade 9 math · Fractions of a number, Word problems, Rounding, Two-step equations · Reading level grades 7-9

Detective: _____ **Date:** _____

The Carbon Citadel has been breached! The priceless Paragon Diamond, a massive flawless crystal of unmatched purity, has been stolen from its gravity-locked pedestal. As the agency's lead detective, you must solve the security overrides and track down the thief before they escape orbit.

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 Infiltrator is _____

Possible suspects

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

NAME	PRIMARY ABILITY	INFILTRATION TOOL	HANDEDNESS	HAIR DYE RESIDUE	DEFENSIVE COUNTER
Hope	crystal growth	sonic drill	right handed writer	silver hair	loud noise
Florentine	speed dashing	decoy clone	right handed writer	amber hair	cold water
Regent	phase shifting	sonic drill	right handed writer	amber hair	bright light
Excelsior	phase shifting	smoke bomb	right handed writer	neon hair	bright light
Chopard	phase shifting	laser cutter	left handed writer	neon hair	cold water
Bulgari	crystal growth	decoy clone	right handed writer	amber hair	bright light
Spirit	metal melting	smoke bomb	left handed writer	amber hair	bright light
Graff	phase shifting	laser cutter	right handed writer	silver hair	loud noise
Cartier	metal melting	laser cutter	left handed writer	amber hair	bright light
Sancy	speed dashing	hover boots	right handed writer	amber hair	cold water
Centenary	phase shifting	sonic drill	right handed writer	amber hair	cold water
Cullinan	phase shifting	decoy clone	right handed writer	amber hair	bright light
Golden	metal melting	hover boots	right handed writer	amber hair	bright light
Winston	crystal growth	laser cutter	right handed writer	amber hair	loud noise
Millennium	gravity control	sonic drill	right handed writer	amber hair	bright light
Taylor	crystal growth	smoke bomb	right handed writer	neon hair	bright light
Tiffany	crystal growth	hover boots	right handed writer	neon hair	bright light
Orlov	speed dashing	sonic drill	right handed writer	amber hair	bright light
Darya	gravity control	hover boots	left handed writer	amber hair	loud noise
Incomparable	gravity control	laser cutter	left handed writer	silver hair	loud noise
Kohinoor	gravity control	decoy clone	left handed writer	silver hair	loud noise

CLUE 1

Fractions of a number

To begin, Agent Spark must audit the diamond crates. Solving this word problem reveals what gear the thief bypassed.

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

T																T
19	32	51	35	9	11	11	25	9	40	31	58	51	24	40	58	19
6	24	51	25	31	51	12	58	33	12	11	58	40	51			

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

$6/10 \text{ of } 55 = \square \rightarrow \boxed{\text{Y}}$

$1/2 \text{ of } 102 = \square \rightarrow \boxed{\text{E}}$

$4/8 \text{ of } 62 = \square \rightarrow \boxed{\text{D}}$

$3/10 \text{ of } 40 = \square \rightarrow \boxed{\text{C}}$

$2/10 \text{ of } 125 = \square \rightarrow \boxed{\text{A}}$

$2/6 \text{ of } 96 = \square \rightarrow \boxed{\text{H}}$

$2/5 \text{ of } 145 = \square \rightarrow \boxed{\text{O}}$

$2/6 \text{ of } 72 = \square \rightarrow \boxed{\text{S}}$

$3/6 \text{ of } 80 = \square \rightarrow \boxed{\text{N}}$

$6/8 \text{ of } 12 = \square \rightarrow \boxed{\text{I}}$

$5/10 \text{ of } 70 = \square \rightarrow \boxed{\text{V}}$

$5/10 \text{ of } 12 = \square \rightarrow \boxed{\text{U}}$

$5/10 \text{ of } 22 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 2

Word problems

Only a fraction of the museum security grids remained active during the heist. We calculate the surviving nodes to reveal the thief's tell.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

R									D	E	D	W	R			E	R
95	76	15	65	42	65	63	29					95	76	42		95	

Agent Spark found 48 crystals yesterday and 47 more today. How many crystals in all?

Answer: → **R**

There were 45 scanners. 16 were used up. How many scanners are left?

Answer: → **N**

Agent Spark found 40 crystals yesterday and 25 more today. How many crystals in all?

Answer: → **H**

Agent Spark lined up 9 rows of 7 crystals. How many crystals in all?

Answer: → **A**

Agent Spark found 42 lasers yesterday and 34 more today. How many lasers in all?

Answer: → **I**

Agent Spark lined up 3 rows of 5 scanners. How many scanners in all?

Answer: → **G**

Agent Spark found 33 scanners yesterday and 9 more today. How many scanners in all?

Answer: → **T**

Scratch space:

CLUE 3
Rounding

The vault pressure sensors give an estimated reading rounded to the nearest thousand. Find the actual weight to discover the hair color.

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

T			T												
370	500	3000	370	500	230	3000	7000	7000	4300	3000	50	7000	2900	900	2000

					T					T
5000	2900	230	20	500	370	4300	230	20	500	370

Round 373 to the nearest ten → **T**

Round 1,703 to the nearest thousand → **M**

Round 4,331 to the nearest hundred → **L**

Round 47 to the nearest ten → **D**

Round 229 to the nearest ten → **I**

Round 930 to the nearest hundred → **O**

Round 24 to the nearest ten → **G**

Round 2,927 to the nearest hundred → **R**

Round 537 to the nearest hundred → **H**

Round 3,027 to the nearest thousand → **E**

Round 4,751 to the nearest thousand → **B**

Round 7,270 to the nearest thousand → **F**

Scratch space:

CLUE 4

Two-step equations

An encrypted laser puzzle blocks the security feed. Solved in two algebraic steps, the camera footage exposes the villain's weakness.

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

W																		
3	5	9	5	4	5	15	4	5	9	22	21	12	5	6	10	22	7	6
22	4	4	10	5	16	22	2	11	4									

$4x + 8 = 20, x = \boxed{} \rightarrow \boxed{W}$

$7x + 7 = 119, x = \boxed{} \rightarrow \boxed{V}$

$3x + 4 = 67, x = \boxed{} \rightarrow \boxed{M}$

$7x + 1 = 64, x = \boxed{} \rightarrow \boxed{D}$

$5x + 8 = 83, x = \boxed{} \rightarrow \boxed{C}$

$6x + 4 = 40, x = \boxed{} \rightarrow \boxed{R}$

$5x + 6 = 16, x = \boxed{} \rightarrow \boxed{U}$

$5x + 12 = 122, x = \boxed{} \rightarrow \boxed{A}$

$4x + 12 = 56, x = \boxed{} \rightarrow \boxed{L}$

$9x + 4 = 49, x = \boxed{} \rightarrow \boxed{E}$

$6x + 11 = 83, x = \boxed{} \rightarrow \boxed{B}$

$5x + 1 = 51, x = \boxed{} \rightarrow \boxed{H}$

$9x + 10 = 46, x = \boxed{} \rightarrow \boxed{T}$

$9x + 1 = 64, x = \boxed{} \rightarrow \boxed{I}$

Scratch space:

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

We analyze the fraction of depleted power cells left in the mainframe to double-check the suspect's exact escape vector.

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:

$1/2 \text{ of } 22 = \boxed{}$

$5/6 \text{ of } 12 = \boxed{}$

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

$5/10 \text{ of } 16 = \boxed{}$

$1/8 \text{ of } 16 = \boxed{}$

$1/2 \text{ of } 6 = \boxed{}$

$2/3 \text{ of } 9 = \boxed{}$

$1/3 \text{ of } 15 = \boxed{}$

$1/10 \text{ of } 90 = \boxed{}$

$3/10 \text{ of } 40 = \boxed{}$

$2/8 \text{ of } 16 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain floats over the pressure plates, then drills through the floor.
2. The villain phases through the vault wall, then escapes using hover boots.
3. The villain dashes past the laser grid, then creates a decoy to distract guards.
4. The villain floats over the pressure plates, then cuts the display case.
5. The villain melts the security glass, then releases a thick smoke cloud.
6. The villain melts the security glass, then creates a decoy to distract guards.
7. The villain phases through the vault wall, then drills through the floor.
8. The villain melts the security glass, then drills through the floor.
9. The villain crystallizes the lock mechanism, then drills through the floor.
10. The villain dashes past the laser grid, then drills through the floor.
11. The villain melts the security glass, then escapes using hover boots.
12. The villain dashes past the laser grid, then releases a thick smoke cloud.

Answer Key

The Heist of the Paragon Diamond

Culprit: Regent

phase shifting · sonic drill · right handed writer · amber hair · bright light

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE A DECOY CLONE"

$\frac{4}{8}$ of 38 = 19 (T) · $\frac{6}{10}$ of 55 = 33 (Y) · $\frac{1}{2}$ of 102 = 51 (E) · $\frac{4}{8}$ of 62 = 31 (D) · $\frac{3}{10}$ of 40 = 12 (C) · $\frac{2}{10}$ of 125 = 25 (A) · $\frac{2}{6}$ of 96 = 32 (H) · $\frac{2}{5}$ of 145 = 58 (O) · $\frac{2}{6}$ of 72 = 24 (S) · $\frac{3}{6}$ of 80 = 40 (N) · $\frac{6}{8}$ of 12 = 9 (I) · $\frac{5}{10}$ of 70 = 35 (V) · $\frac{5}{10}$ of 12 = 6 (U) · $\frac{5}{10}$ of 22 = 11 (L)

Clue 2 (Word problems): "RIGHT HANDED WRITER"

Agent Spark found 48 crystals yesterday and 47 more today. How many crystals in all? = 95 (R) · There were 45 scanners. 16 were used up. How many scanners are left? = 29 (N) · Agent Spark found 40 crystals yesterday and 25 more today. How many crystals in all? = 65 (H) · Agent Spark lined up 9 rows of 7 crystals. How many crystals in all? = 63 (A) · Agent Spark found 42 lasers yesterday and 34 more today. How many lasers in all? = 76 (I) · Agent Spark lined up 3 rows of 5 scanners. How many scanners in all? = 15 (G) · Agent Spark found 33 scanners yesterday and 9 more today. How many scanners in all? = 42 (T)

Clue 3 (Rounding): "THE THIEF FLED FROM BRIGHT LIGHT"

Round 373 to the nearest ten = 370 (T) · Round 1,703 to the nearest thousand = 2000 (M) · Round 4,331 to the nearest hundred = 4300 (L) · Round 47 to the nearest ten = 50 (D) · Round 229 to the nearest ten = 230 (I) · Round 930 to the nearest hundred = 900 (O) · Round 24 to the nearest ten = 20 (G) · Round 2,927 to the nearest hundred = 2900 (R) · Round 537 to the nearest hundred = 500 (H) · Round 3,027 to the nearest thousand = 3000 (E) · Round 4,751 to the nearest thousand = 5000 (B) · Round 7,270 to the nearest thousand = 7000 (F)

Clue 4 (Two-step equations): "WE DETECTED AMBER HAIR AT THE VAULT"

$4x + 8 = 20$, $x = 3$ (W) · $7x + 7 = 119$, $x = 16$ (V) · $3x + 4 = 67$, $x = 21$ (M) · $7x + 1 = 64$, $x = 9$ (D) · $5x + 8 = 83$, $x = 15$ (C) · $6x + 4 = 40$, $x = 6$ (R) · $5x + 6 = 16$, $x = 2$ (U) · $5x + 12 = 122$, $x = 22$ (A) · $4x + 12 = 56$, $x = 11$ (L) · $9x + 4 = 49$, $x = 5$ (E) · $6x + 11 = 83$, $x = 12$ (B) · $5x + 1 = 51$, $x = 10$ (H) · $9x + 10 = 46$, $x = 4$ (T) · $9x + 1 = 64$, $x = 7$ (I)

Clue 5 (Fractions of a number): surviving statement is box 7 → Regent

$\frac{1}{2}$ of 22 = 11 · $\frac{5}{6}$ of 12 = 10 · $\frac{2}{10}$ of 5 = 1 · $\frac{5}{10}$ of 16 = 8 · $\frac{1}{8}$ of 16 = 2 · $\frac{1}{2}$ of 6 = 3 · $\frac{2}{3}$ of 9 = 6 · $\frac{1}{3}$ of 15 = 5 · $\frac{1}{10}$ of 90 = 9 · $\frac{3}{10}$ of 40 = 12 · $\frac{2}{8}$ of 16 = 4