



The Sky Citadel Intrusion

Grade 7 math · Multiplication, Multi-step word problems, Integers, Percentages, Missing addends · Reading level grades 7-9

Detective: _____ Date: _____

An intruder breached the Sky Citadel's central vault during a storm and stole the Sunstone Core. The Chief Vault Keeper logged critical security readings before the main power cut out. Solve each math puzzle to uncover vital evidence and unmask the thief!

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 agent is _____

Possible suspects

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

NAME	PRIMARY GEAR	SECONDARY GADGET	HABITUAL STANCE	HAIRSTYLE	COUNTERMEASURE
Captain Vance	Grappling Hook	Decoder Ring	Watch on left wrist	Spiky mohawk	Sonic blasts
Scholar Pryce	Plasma Shield	Decoder Ring	Watch on right wrist	Tangled ponytail	Sonic blasts
Archivist Vane	Grappling Hook	EMP Grenade	Watch on left wrist	Tangled ponytail	Bright flares
Agent Sterling	Grappling Hook	Smoke Bomb	Watch on left wrist	Tangled ponytail	Bright flares
Signalman Park	Sonic Scanner	Jet Boots	Watch on left wrist	Tangled ponytail	Magnet pulses
Explorer Thorne	Thermal Laser	Tracker Dart	Watch on left wrist	Tangled ponytail	Bright flares
Pilot Drake	Plasma Shield	Jet Boots	Watch on right wrist	Tangled ponytail	Sonic blasts
Scout Finch	Grappling Hook	Jet Boots	Watch on right wrist	Tangled ponytail	Bright flares
Specialist Quinn	Grappling Hook	Tracker Dart	Watch on right wrist	Shaved buzzcut	Bright flares
Engineer Nova	Grappling Hook	Tracker Dart	Watch on left wrist	Spiky mohawk	Sonic blasts
Operator Stone	Glider Wings	Smoke Bomb	Watch on right wrist	Spiky mohawk	Magnet pulses
Guard Lennox	Thermal Laser	Tracker Dart	Watch on left wrist	Shaved buzzcut	Sonic blasts
Cadet Rowan	Sonic Scanner	Decoder Ring	Watch on right wrist	Spiky mohawk	Magnet pulses
Navigator Cruz	Thermal Laser	Jet Boots	Watch on left wrist	Spiky mohawk	Bright flares
Commander Reed	Glider Wings	Smoke Bomb	Watch on left wrist	Tangled ponytail	Bright flares
Officer Chen	Glider Wings	Jet Boots	Watch on left wrist	Tangled ponytail	Sonic blasts
Dr Aris	Sonic Scanner	EMP Grenade	Watch on right wrist	Shaved buzzcut	Bright flares
Surveyor West	Sonic Scanner	EMP Grenade	Watch on right wrist	Tangled ponytail	Magnet pulses
Sentry Hayes	Glider Wings	Jet Boots	Watch on right wrist	Tangled ponytail	Magnet pulses
Operative Cole	Sonic Scanner	EMP Grenade	Watch on left wrist	Tangled ponytail	Sonic blasts
Tracker Hollis	Grappling Hook	Decoder Ring	Watch on left wrist	Tangled ponytail	Bright flares

Multiplication facts (1-12)

To decipher the security log and rule out a secondary gadget, solve these multi-step field reports from the vault breach.

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

7 40 27 80 4 8 8 49 4 60 35 4 35 60 25 7 16 63 27

49 35 27 50 25 35 27 66 66 4 60 2

$7 \times 1 = \boxed{} \rightarrow \boxed{\text{T}}$

$1 \times 8 = \square \rightarrow \boxed{\text{L}}$

$9 \times 7 = \boxed{} \rightarrow \boxed{\text{S}}$

$$5 \times 5 = \boxed{} \rightarrow \boxed{0}$$

$3 \times 9 = \boxed{} \rightarrow \boxed{\text{E}}$

$$2 \times 2 = \boxed{} \rightarrow \boxed{1}$$

$$8 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$2 \times 8 = \boxed{} \rightarrow \boxed{\text{U}}$$

$1 \times 2 = \boxed{} \rightarrow \boxed{\mathbf{G}}$

$10 \times 4 = \boxed{} \rightarrow \boxed{\text{H}}$

$5 \times 10 = \boxed{} \rightarrow \boxed{\text{C}}$

$10 \times 6 = \boxed{} \rightarrow \boxed{\text{N}}$

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

$7 \times 5 = \square \rightarrow \boxed{\mathbf{D}}$

$6 \times 11 = \square \rightarrow \boxed{\mathbf{R}}$

Scratch space:

CLUE 2

Multi-step word problems

Analyzing equal batches of gear requisition orders requires fast multiplication to find the suspect's main tool.

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

A witness saw the villain was

W								L	E	F		W	R	I	S	
38	26	35	62	61	65	90					35	38				35

Scout collected 30 ration packs in the morning and 160 ration packs in the afternoon, then split them equally among 5 Vanguard Recon. How many ration packs did each get?

Answer: → **W**

Scout earned 5 climbing ropes in each of 5 rounds, plus 43 bonus climbing ropes. Then 6 climbing ropes were lost. How many climbing ropes are left?

Answer: → **C**

Scout filled 4 boxes with 5 compasses each, then found 6 more compasses. How many compasses are there in all?

Answer: → **A**

There were 230 compasses in all. 20 compasses were set aside. The rest were shared equally among 6 Vanguard Recon. How many compasses did each get?

Answer: → **T**

There were 570 energy cells in all. 3 Vanguard Recon used 40 energy cells each. The other 5 Vanguard Recon shared the rest equally. How many energy cells did each of the other Vanguard Recon get?

Answer: → **N**

Scout filled 3 boxes with 3 climbing ropes each, then found 56 more climbing ropes. How many climbing ropes are there in all?

Answer: → **O**

Scout earned 5 compasses in each of 3 rounds, plus 60 bonus compasses. Then 14 compasses were lost. How many compasses are left?

Answer: → **H**

Scratch space:

CLUE 3 Integers

Tracking altitude gains and underground depth drops using integers reveals where the suspect fled.

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

12 10 2 23 9 13 28 2 25 15 18 25 2 15 8 12 9

27 23 24 13 10 12 6 4 15 23 2 18

$$4 - (-8) = \boxed{} \rightarrow \boxed{\text{T}}$$

$$(-13) + 38 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

$$(-1) + 7 = \boxed{} \rightarrow \boxed{\mathbf{F}}$$

$$3 - (-6) = \boxed{} \rightarrow \boxed{0}$$

$$10 - (-3) = \boxed{} \rightarrow \boxed{\text{G}}$$

$$(-7) + 22 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$(-4) + 22 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$(-6) + 33 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

$$(-15) + 43 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$(-13) + 21 = \boxed{} \rightarrow \boxed{\text{K}}$$

$$(-13) + 23 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$(-13) + 36 = \boxed{} \rightarrow \boxed{\mathbf{R}}$$

$$(-13) + 37 = \boxed{} \rightarrow \boxed{}$$

$$(-13) + 17 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$(-14) + 16 = \boxed{} \rightarrow \boxed{\mathbf{E}}$$

Scratch space:

CLUE 4 Percentages

Calculating the percentage of power drained from the backup grid unveils a key observation about the culprit.

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

T																	
45	44	47	29	40	47	38	47	44	21	29	45	21	38	19	32	47	60

				T								
35	34	38	23	45	21	11	32	44	21	11	27	

$60\% \text{ of } 75 = \square \rightarrow \boxed{\text{T}}$

$5\% \text{ of } 880 = \square \rightarrow \boxed{\text{H}}$

$25\% \text{ of } 160 = \square \rightarrow \boxed{\text{C}}$

$5\% \text{ of } 700 = \square \rightarrow \boxed{\text{P}}$

$20\% \text{ of } 235 = \square \rightarrow \boxed{\text{E}}$

$20\% \text{ of } 105 = \square \rightarrow \boxed{\text{A}}$

$25\% \text{ of } 152 = \square \rightarrow \boxed{\text{N}}$

$25\% \text{ of } 92 = \square \rightarrow \boxed{\text{Y}}$

$40\% \text{ of } 150 = \square \rightarrow \boxed{\text{D}}$

$20\% \text{ of } 170 = \square \rightarrow \boxed{\text{O}}$

$50\% \text{ of } 58 = \square \rightarrow \boxed{\text{S}}$

$25\% \text{ of } 128 = \square \rightarrow \boxed{\text{L}}$

$5\% \text{ of } 380 = \square \rightarrow \boxed{\text{G}}$

$25\% \text{ of } 44 = \square \rightarrow \boxed{\text{I}}$

$10\% \text{ of } 270 = \square \rightarrow \boxed{\text{R}}$

Scratch space:

CLUE 5**Missing addends - the last clue**

Balancing the remaining supply inventory tallies exposes the missing addend to reveal physical evidence left at the scene.

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:

$40 + \underline{\quad} = 49$

$35 + \underline{\quad} = 39$

$2 + \underline{\quad} = 5$

$39 + \underline{\quad} = 44$

$25 + \underline{\quad} = 35$

$30 + \underline{\quad} = 41$

$16 + \underline{\quad} = 24$

$4 + \underline{\quad} = 5$

$22 + \underline{\quad} = 24$

$11 + \underline{\quad} = 23$

$7 + \underline{\quad} = 13$

Step 2 - cross out the sentence with each answer:

1. The villain cut through the vault with a thermal laser, then disabled the grid with an emp grenade.
2. The villain mapped the chamber with a sonic scanner, then disabled the grid with an emp grenade.
3. The villain swung across the chasm with a grappling hook, then disabled the grid with an emp grenade.
4. The villain soared past the canyon with glider wings, then escaped into the mist with a smoke bomb.
5. The villain cut through the vault with a thermal laser, then blasted away using jet boots.
6. The villain soared past the canyon with glider wings, then tagged the guard with a tracker dart.
7. The villain cut through the vault with a thermal laser, then tagged the guard with a tracker dart.
8. The villain blocked the security turret with a plasma shield, then cracked the lock with a decoder ring.
9. The villain swung across the chasm with a grappling hook, then escaped into the mist with a smoke bomb.
10. The villain blocked the security turret with a plasma shield, then blasted away using jet boots.
11. The villain mapped the chamber with a sonic scanner, then blasted away using jet boots.
12. The villain soared past the canyon with glider wings, then cracked the lock with a decoder ring.

Answer Key

The Sky Citadel Intrusion

Culprit: Explorer Thorne

Thermal Laser · Tracker Dart · Watch on left wrist · Tangled ponytail · Bright flares

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DID NOT USE A DECODER RING"

$7 \times 1 = 7$ (T) · $1 \times 8 = 8$ (L) · $9 \times 7 = 63$ (S) · $5 \times 5 = 25$ (O) · $3 \times 9 = 27$ (E) · $2 \times 2 = 4$ (I) · $8 \times 10 = 80$ (V) · $2 \times 8 = 16$ (U) · $1 \times 2 = 2$ (G) · $10 \times 4 = 40$ (H) · $5 \times 10 = 50$ (C) · $10 \times 6 = 60$ (N) · $7 \times 7 = 49$ (A) · $7 \times 5 = 35$ (D) · $6 \times 11 = 66$ (R)

Clue 2 (Multi-step word problems): "WATCH ON LEFT WRIST"

Scout collected 30 ration packs in the morning and 160 ration packs in the afternoon, then split them equally among 5 Vanguard Recon. How many ration packs did each get? = 38 (W) · Scout earned 5 climbing ropes in each of 5 rounds, plus 43 bonus climbing ropes. Then 6 climbing ropes were lost. How many climbing ropes are left? = 62 (C) · Scout filled 4 boxes with 5 compasses each, then found 6 more compasses. How many compasses are there in all? = 26 (A) · There were 230 compasses in all. 20 compasses were set aside. The rest were shared equally among 6 Vanguard Recon. How many compasses did each get? = 35 (T) · There were 570 energy cells in all. 3 Vanguard Recon used 40 energy cells each. The other 5 Vanguard Recon shared the rest equally. How many energy cells did each of the other Vanguard Recon get? = 90 (N) · Scout filled 3 boxes with 3 climbing ropes each, then found 56 more climbing ropes. How many climbing ropes are there in all? = 65 (O) · Scout earned 5 compasses in each of 3 rounds, plus 60 bonus compasses. Then 14 compasses were lost. How many compasses are left? = 61 (H)

Clue 3 (Integers): "THE ROGUE WAS WEAK TO BRIGHT FLARES"

$4 - (-8) = 12$ (T) · $(-13) + 38 = 25$ (W) · $(-1) + 7 = 6$ (F) · $3 - (-6) = 9$ (O) · $10 - (-3) = 13$ (G) · $(-7) + 22 = 15$ (A) · $(-4) + 22 = 18$ (S) · $(-6) + 33 = 27$ (B) · $(-15) + 43 = 28$ (U) · $(-13) + 21 = 8$ (K) · $(-13) + 23 = 10$ (H) · $(-13) + 36 = 23$ (R) · $(-13) + 37 = 24$ (I) · $(-13) + 17 = 4$ (L) · $(-14) + 16 = 2$ (E)

Clue 4 (Percentages): "THE SCENE HAS TANGLED PONYTAIL HAIR"

60% of 75 = 45 (T) · 5% of 880 = 44 (H) · 25% of 160 = 40 (C) · 5% of 700 = 35 (P) · 20% of 235 = 47 (E) · 20% of 105 = 21 (A) · 25% of 152 = 38 (N) · 25% of 92 = 23 (Y) · 40% of 150 = 60 (D) · 20% of 170 = 34 (O) · 50% of 58 = 29 (S) · 25% of 128 = 32 (L) · 5% of 380 = 19 (G) · 25% of 44 = 11 (I) · 10% of 270 = 27 (R)

Clue 5 (Missing addends): surviving statement is box 7 → Explorer Thorne

$40 + \underline{\quad} = 49 = 9$ · $35 + \underline{\quad} = 39 = 4$ · $2 + \underline{\quad} = 5 = 3$ · $39 + \underline{\quad} = 44 = 5$ · $25 + \underline{\quad} = 35 = 10$ · $30 + \underline{\quad} = 41 = 11$ · $16 + \underline{\quad} = 24 = 8$ · $4 + \underline{\quad} = 5 = 1$ · $22 + \underline{\quad} = 24 = 2$ · $11 + \underline{\quad} = 23 = 12$ · $7 + \underline{\quad} = 13 = 6$