



The Case of the Golden Catnip Scepter

Grade 7 math · Integers, Percentages, Order of operations, Exponents, Two-step equations · Reading level grades 7-9

Detective: _____ Date: _____

Someone has swiped the priceless Golden Catnip Scepter from its velvet pedestal! As the lead detective of the Whiskers Division, you must analyze the clues left behind to unmask the rogue feline burglar before they escape the city.

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 cat burglar is _____

Possible suspects

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

NAME	SPECIALIST SKILL	THIEF GADGET	CALLING CARD	FUR TEXTURE	DISTRACTION
Meowth	Laser Pointer Dodging	Night-Vision Goggles	Left-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Garfield	High-Shelf Balancing	Squeaky Mouse Drone	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Captain Fluff	Laser Pointer Dodging	Velvet Paw Silencers	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Sylvester	Laser Pointer Dodging	Catnip Smoke Bomb	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Snickerdoodle	Cardboard Box Squeezing	Squeaky Mouse Drone	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Whiskey	Laser Pointer Dodging	Catnip Smoke Bomb	Right-Paw Dominant	Curly Selkirk Shag	Crinkly Plastic Bags
Stimpy	Cardboard Box Squeezing	Velvet Paw Silencers	Right-Paw Dominant	Curly Selkirk Shag	Smelly Sardine Bait
Azrael	High-Shelf Balancing	Catnip Smoke Bomb	Left-Paw Dominant	Curly Selkirk Shag	Smelly Sardine Bait
Hobbes	Cardboard Box Squeezing	Velvet Paw Silencers	Right-Paw Dominant	Fluffy Calico Fur	Chirping Toy Birds
Sir Pounce	High-Shelf Balancing	Night-Vision Goggles	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Mr Bigglesworth	Laser Pointer Dodging	Velvet Paw Silencers	Right-Paw Dominant	Fluffy Calico Fur	Smelly Sardine Bait
Professor Meow	Cardboard Box Squeezing	Catnip Smoke Bomb	Right-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Duchess	Cardboard Box Squeezing	Velvet Paw Silencers	Right-Paw Dominant	Sleek Siamese Coat	Crinkly Plastic Bags
Heathcliff	Silent Yarn Unraveling	Night-Vision Goggles	Left-Paw Dominant	Sleek Siamese Coat	Smelly Sardine Bait
Whiskers	High-Shelf Balancing	Grappling Cat Claw	Left-Paw Dominant	Fluffy Calico Fur	Crinkly Plastic Bags
Felix	Laser Pointer Dodging	Velvet Paw Silencers	Left-Paw Dominant	Sleek Siamese Coat	Chirping Toy Birds
Princess Buttercup	Laser Pointer Dodging	Catnip Smoke Bomb	Left-Paw Dominant	Curly Selkirk Shag	Smelly Sardine Bait
Oliver	Cardboard Box Squeezing	Grappling Cat Claw	Left-Paw Dominant	Curly Selkirk Shag	Crinkly Plastic Bags
Figaro	Super-Sonic Purring	Squeaky Mouse Drone	Left-Paw Dominant	Fluffy Calico Fur	Smelly Sardine Bait
Barnaby	Laser Pointer Dodging	Catnip Smoke Bomb	Right-Paw Dominant	Fluffy Calico Fur	Chirping Toy Birds
Cheshire	Cardboard Box Squeezing	Catnip Smoke Bomb	Left-Paw Dominant	Curly Selkirk Shag	Crinkly Plastic Bags

CLUE 1 Integers

Our thermal scanners tracked changes in temperature inside the exhibit vault. Add the rises and drops in temperature to find the final heat signature.

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

Two rows of three sets of three boxes each. The first row shows a sequence of numbers: 23, 13, 29, 12, 3, 22, 17, 2, 20, 22, 14, 8, 14, 1, 5, 23, 3, 16, 29. The second row shows a sequence of numbers: 23, 13, 29, 18, 5, 3, 16, 29, 14, 22, 5, 1, 29. In both rows, the first box of each set is highlighted in orange and contains the letter 'T'.

$$19 - (-4) = \boxed{} \rightarrow \boxed{\text{T}}$$

$$(-4) + 5 = \boxed{} \rightarrow \boxed{\mathbf{N}}$$

$$20 - (-9) = \boxed{} \rightarrow \boxed{\text{E}}$$

$$(-9) + 23 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$(-4) + 12 = \boxed{} \rightarrow \boxed{8}$$

$$(-13) + 33 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$(-6) + 19 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$3 - (-14) = \boxed{} \rightarrow \mathbf{G}$$

$$(-10) + 15 = \boxed{} \rightarrow \boxed{\mathbf{0}}$$

$$(-1) + 13 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

$$(-4) + 22 = \boxed{} \rightarrow \boxed{\mathbf{M}}$$

$$(-10) + 13 = \boxed{} \rightarrow \boxed{\text{U}}$$

$12 - (-10) = \boxed{} \rightarrow \boxed{\text{R}}$

$6 - (-10) = \boxed{} \rightarrow \boxed{\text{S}}$

$$(-7) + 9 = \boxed{} \rightarrow \boxed{\text{L}}$$

Scratch space:

CLUE 2 Percentages

The suspect tore through the archives, shredding documents. Calculate the exact percentage of intact pages remaining to decode the first lead.

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

T																	
28	60	15	34	6	54	7	9	38	54	57	38	32	6	32	2	17	7

T										T			
28	60	15	2	54	54	2	7	60	28	30	38	57	

50% of 56 = → T	75% of 8 = → U	40% of 5 = → I
20% of 35 = → G	75% of 40 = → P	60% of 25 = → E
25% of 68 = → N	40% of 85 = → B	20% of 45 = → L
20% of 190 = → A	50% of 120 = → H	5% of 640 = → S
60% of 90 = → R	50% of 114 = → W	

Scratch space:

CLUE 3
Order of operations

We need to override the vault's security grid using the correct mathematical sequence. Solve the multi-step expression in order to unlock the fingerprint log.

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

T																		
65	43	66	36	37	72	93	56	53	72	9	53	61	77	18	11	56	66	12
36	46	53	62	72	11	6	71	56	46	36	53	93						

$45 + 5 \times 4 = \square \rightarrow \text{[T]}$

$8 \times 10 - 18 = \square \rightarrow \text{[C]}$

$10 \times 7 - 9 = \square \rightarrow \text{[S]}$

$4 \times 6 - 12 = \square \rightarrow \text{[D]}$

$7 \times 11 - 6 = \square \rightarrow \text{[K]}$

$36 + 4 \times 5 = \square \rightarrow \text{[L]}$

$14 + 7 \times 9 = \square \rightarrow \text{[F]}$

$61 + 8 \times 4 = \square \rightarrow \text{[G]}$

$2 + 2 \times 2 = \square \rightarrow \text{[N]}$

$3 + 3 \times 2 = \square \rightarrow \text{[W]}$

$8 \times 4 - 14 = \square \rightarrow \text{[O]}$

$7 \times 11 - 5 = \square \rightarrow \text{[R]}$

$54 + 6 \times 2 = \square \rightarrow \text{[E]}$

$7 \times 8 - 3 = \square \rightarrow \text{[A]}$

$1 + 4 \times 9 = \square \rightarrow \text{[U]}$

$7 \times 9 - 27 = \square \rightarrow \text{[B]}$

$3 + 4 \times 2 = \square \rightarrow \text{[I]}$

$25 + 6 \times 3 = \square \rightarrow \text{[H]}$

$34 + 6 \times 2 = \square \rightarrow \text{[Y]}$

Scratch space:

CLUE 4 Exponents

The laser grid power levels scale exponentially based on how many beams are crossed. Calculate the total power output to find where the thief broke through.

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

W																		
400	49	4	144	225	81	36	4	361	225	4	4	9	243	27	361	128	243	144
4	225	125	144	81	16	216	49	324	216	49	361	4						

$20^2 = \square \rightarrow \text{W}$	$2^7 = \square \rightarrow \text{I}$	$6^2 = \square \rightarrow \text{D}$	$3^5 = \square \rightarrow \text{C}$
$3^4 = \square \rightarrow \text{N}$	$15^2 = \square \rightarrow \text{U}$	$19^2 = \square \rightarrow \text{L}$	$2^4 = \square \rightarrow \text{T}$
$5^3 = \square \rightarrow \text{R}$	$3^2 = \square \rightarrow \text{Y}$	$6^3 = \square \rightarrow \text{H}$	$18^2 = \square \rightarrow \text{S}$
$2^2 = \square \rightarrow \text{F}$	$12^2 = \square \rightarrow \text{O}$	$3^3 = \square \rightarrow \text{A}$	$7^2 = \square \rightarrow \text{E}$

Scratch space:

CLUE 5**Two-step equations - the last clue**

The getaway vehicle left at a steady speed after starting from a known checkpoint. Solve the distance equation to pinpoint the suspect's hideout.

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:

$4x + 2 = 18, x = \boxed{}$

$3x + 11 = 44, x = \boxed{}$

$2x + 7 = 31, x = \boxed{}$

$4x + 7 = 39, x = \boxed{}$

$6x + 12 = 42, x = \boxed{}$

$2x + 10 = 12, x = \boxed{}$

$4x + 6 = 18, x = \boxed{}$

$5x + 2 = 32, x = \boxed{}$

$2x + 2 = 16, x = \boxed{}$

$2x + 7 = 11, x = \boxed{}$

$3x + 1 = 28, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain balanced on the highest shelf, then distracted guards with a squeaky mouse drone.
2. The villain shattered glass with high-frequency purrs, then swung away using a grappling claw.
3. The villain dodged the lasers with ease, then navigated the dark with night-vision goggles.
4. The villain squeezed through a tight carton, then vanished inside a catnip smoke cloud.
5. The villain balanced on the highest shelf, then swung away using a grappling claw.
6. The villain shattered glass with high-frequency purrs, then vanished inside a catnip smoke cloud.
7. The villain shattered glass with high-frequency purrs, then navigated the dark with night-vision goggles.
8. The villain squeezed through a tight carton, then distracted guards with a squeaky mouse drone.
9. The villain dodged the lasers with ease, then swung away using a grappling claw.
10. The villain balanced on the highest shelf, then navigated the dark with night-vision goggles.
11. The villain dodged the lasers with ease, then vanished inside a catnip smoke cloud.
12. The villain dodged the lasers with ease, then crept past sensors wearing velvet paw silencers.

Answer Key

The Case of the Golden Catnip Scepter

Culprit: Sir Pounce

High-Shelf Balancing · Night-Vision Goggles · Right-Paw Dominant · Fluffy Calico Fur · Crinkly Plastic Bags

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Integers): "THE BURGLAR DID NOT USE THE MOUSE DRONE"

$19 - (-4) = 23$ (T) · $(-4) + 5 = 1$ (N) · $20 - (-9) = 29$ (E) · $(-9) + 23 = 14$ (D) · $(-4) + 12 = 8$ (I) · $(-13) + 33 = 20$ (A) · $(-6) + 19 = 13$ (H) · $3 - (-14) = 17$ (G) · $(-10) + 15 = 5$ (O) · $(-1) + 13 = 12$ (B) · $(-4) + 22 = 18$ (M) · $(-10) + 13 = 3$ (U) · $12 - (-10) = 22$ (R) · $6 - (-10) = 16$ (S) · $(-7) + 9 = 2$ (L)

Clue 2 (Percentages): "THE BURGLAR WAS USING THEIR RIGHT PAW"

50% of 56 = 28 (T) · 75% of 8 = 6 (U) · 40% of 5 = 2 (I) · 20% of 35 = 7 (G) · 75% of 40 = 30 (P) · 60% of 25 = 15 (E) · 25% of 68 = 17 (N) · 40% of 85 = 34 (B) · 20% of 45 = 9 (L) · 20% of 190 = 38 (A) · 50% of 120 = 60 (H) · 5% of 640 = 32 (S) · 60% of 90 = 54 (R) · 50% of 114 = 57 (W)

Clue 3 (Order of operations): "THE BURGLAR WAS FOILED BY A CRINKLY BAG"

$45 + 5 \times 4 = 65$ (T) · $8 \times 10 - 18 = 62$ (C) · $10 \times 7 - 9 = 61$ (S) · $4 \times 6 - 12 = 12$ (D) · $7 \times 11 - 6 = 71$ (K) · $36 + 4 \times 5 = 56$ (L) · $14 + 7 \times 9 = 77$ (F) · $61 + 8 \times 4 = 93$ (G) · $2 + 2 \times 2 = 6$ (N) · $3 + 3 \times 2 = 9$ (W) · $8 \times 4 - 14 = 18$ (O) · $7 \times 11 - 5 = 72$ (R) · $54 + 6 \times 2 = 66$ (E) · $7 \times 8 - 3 = 53$ (A) · $1 + 4 \times 9 = 37$ (U) · $7 \times 9 - 27 = 36$ (B) · $3 + 4 \times 2 = 11$ (I) · $25 + 6 \times 3 = 43$ (H) · $34 + 6 \times 2 = 46$ (Y)

Clue 4 (Exponents): "WE FOUND FLUFFY CALICO FUR ON THE SHELF"

$20^2 = 400$ (W) · $2^7 = 128$ (I) · $6^2 = 36$ (D) · $3^5 = 243$ (C) · $3^4 = 81$ (N) · $15^2 = 225$ (U) · $19^2 = 361$ (L) · $2^4 = 16$ (T) · $5^3 = 125$ (R) · $3^2 = 9$ (Y) · $6^3 = 216$ (H) · $18^2 = 324$ (S) · $2^2 = 4$ (F) · $12^2 = 144$ (O) · $3^3 = 27$ (A) · $7^2 = 49$ (E)

Clue 5 (Two-step equations): surviving statement is box 10 → Sir Pounce

$4x + 2 = 18, x = 4$ · $3x + 11 = 44, x = 11$ · $2x + 7 = 31, x = 12$ · $4x + 7 = 39, x = 8$ · $6x + 12 = 42, x = 5$ · $2x + 10 = 12, x = 1$ · $4x + 6 = 18, x = 3$ · $5x + 2 = 32, x = 6$ · $2x + 2 = 16, x = 7$ · $2x + 7 = 11, x = 2$ · $3x + 1 = 28, x = 9$