



The Great Whisker City Heist

Grade 7 math · Integers, Percentages, Order of operations, Exponents, Two-step equations · Reading level grades 5-6

Detective: _____ Date: _____

A priceless golden tuna statue has been swiped from the Whisker City Museum! Detective, you must comb through the clues, interview the feline suspects, and find the sneaky catburglar before they make off with the prize.

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 catburglar is _____

Possible suspects

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

NAME	SUPER SKILL	FAVORITE TOY	SIGNATURE HABIT	FUR COLOR	DISTRACTION
Whiskers	Silent Prowling	Laser Pointer	Uses Right Paw	Fluffy Calico Fur	Spray Bottle Mist
Smoky	Laser Chasing	Crinkle Ball	Uses Right Paw	Orange Tabby Fur	Rustling Paper Bag
Cleo	Box Squeezing	Squeaky Mouse	Uses Right Paw	Orange Tabby Fur	Rustling Paper Bag
Morris	Laser Chasing	Laser Pointer	Uses Left Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Toulouse	Laser Chasing	Crinkle Ball	Uses Left Paw	Fluffy Calico Fur	Spray Bottle Mist
Duchess	High Jumping	Crinkle Ball	Uses Right Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Berlioz	Box Squeezing	Feather Wand	Uses Left Paw	Sleek Tuxedo Fur	Spray Bottle Mist
Bella	Box Squeezing	Catnip Cushion	Uses Left Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Cheshire	Laser Chasing	Laser Pointer	Uses Right Paw	Sleek Tuxedo Fur	Spray Bottle Mist
Garfield	Laser Chasing	Squeaky Mouse	Uses Left Paw	Sleek Tuxedo Fur	Spray Bottle Mist
Tom	Yarn Tangling	Laser Pointer	Uses Right Paw	Orange Tabby Fur	Smelly Tuna Scent
Simba	High Jumping	Feather Wand	Uses Left Paw	Fluffy Calico Fur	Spray Bottle Mist
Milo	Laser Chasing	Catnip Cushion	Uses Right Paw	Fluffy Calico Fur	Smelly Tuna Scent
Boots	Box Squeezing	Crinkle Ball	Uses Right Paw	Sleek Tuxedo Fur	Rustling Paper Bag
Felix	Yarn Tangling	Squeaky Mouse	Uses Right Paw	Fluffy Calico Fur	Rustling Paper Bag
Sylvester	High Jumping	Squeaky Mouse	Uses Left Paw	Orange Tabby Fur	Smelly Tuna Scent
Puss	Yarn Tangling	Feather Wand	Uses Left Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Salem	Yarn Tangling	Crinkle Ball	Uses Left Paw	Sleek Tuxedo Fur	Rustling Paper Bag
Figaro	Silent Prowling	Feather Wand	Uses Left Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Luna	Silent Prowling	Catnip Cushion	Uses Right Paw	Sleek Tuxedo Fur	Smelly Tuna Scent
Mittens	Box Squeezing	Crinkle Ball	Uses Left Paw	Sleek Tuxedo Fur	Smelly Tuna Scent

CLUE 1 Integers

The security system tracks the temperature changes in the museum basement. Compare these positive and negative temperature drops to find the first clue.

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

T																T
9	16	19	7	12	17	17	15	12	2	21	22	19	6	2	22	9

1	6	19	15	17	15	6	19	30	18	22	12	2	9	19	30	

$(-10) + 19 = \square \rightarrow \text{T}$	$5 - (-11) = \square \rightarrow \text{H}$	$(-2) + 21 = \square \rightarrow \text{E}$
$(-1) + 19 = \square \rightarrow \text{P}$	$19 - (-3) = \square \rightarrow \text{O}$	$20 - (-10) = \square \rightarrow \text{R}$
$(-14) + 35 = \square \rightarrow \text{D}$	$8 - (-4) = \square \rightarrow \text{I}$	$(-10) + 12 = \square \rightarrow \text{N}$
$(-4) + 11 = \square \rightarrow \text{V}$	$(-14) + 15 = \square \rightarrow \text{U}$	$4 - (-11) = \square \rightarrow \text{A}$
$(-11) + 28 = \square \rightarrow \text{L}$	$4 - (-2) = \square \rightarrow \text{S}$	

Scratch space:

CLUE 2

Diagram illustrating memory blocks and their values. The blocks are arranged in two rows. The top row contains 17 blocks with values: 17, 25, 16, 32, 31, 28, 30, 51, 23, 17, 40, 53, 23, 30, 16, 8, 53, 23, 17, 25. The bottom row contains 9 blocks with values: 17, 25, 16, 28, 16, 21, 17, 30, 34, 53. The block with value 17 in the top row and the block with value 17 in the bottom row are highlighted with an orange background and a 'T' label.

50% of 34 = → **T**

10% of 230 = →

10% of 340 = → **A**

10% of 160 = → **E**

50% of 106 = → **W**

50% of 56 = → **L**

20% of 40 = → **D**

5% of 800 = → **S**

50% of 62 = → **U**

20% of 150 = → **P**

5% of 500 = → **H**

25% of 128 = → **C**

60% of 35 = → **F**

10% of 510 = → **R**

CLUE 3
Order of operations

To crack the vault code, you must solve the curator's puzzle using the strict rules of operations in the exact correct order.

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

T			T										T							T
56	91	34	56	91	19	34	45	12	89	106	106	11	56	96	34	49	19	49	56	

T								T				
56	91	34	49	90	34	119	119	9	56	88	106	89

$12 \times 7 - 28 = \square \rightarrow$ T	$6 \times 4 - 13 = \square \rightarrow$ O	$11 \times 3 - 14 = \square \rightarrow$ I
$9 \times 12 - 17 = \square \rightarrow$ H	$56 + 7 \times 9 = \square \rightarrow$ L	$11 \times 5 - 21 = \square \rightarrow$ E
$56 + 8 \times 5 = \square \rightarrow$ R	$2 + 5 \times 2 = \square \rightarrow$ C	$45 + 9 \times 5 = \square \rightarrow$ M
$12 \times 9 - 2 = \square \rightarrow$ N	$12 \times 8 - 8 = \square \rightarrow$ U	$3 + 7 \times 6 = \square \rightarrow$ F
$14 + 5 \times 7 = \square \rightarrow$ S	$10 \times 2 - 11 = \square \rightarrow$ Y	$11 \times 10 - 21 = \square \rightarrow$ A

Scratch space:

CLUE 4 Exponents

A colony of mice is multiplying fast in the grain bin. Use exponents to find how many mice are there and get the next clue.

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

S																		
125	4	8	8	128	9	4	225	81	128	225	49	169	324	400	256	121	8	
											S							
121	100	216	8	169	343	32	100	64	324	225	125	4	8	32	121			

$5^3 = \square \rightarrow$ S	$2^2 = \square \rightarrow$ L	$3^2 = \square \rightarrow$ B	$20^2 = \square \rightarrow$ H
$4^4 = \square \rightarrow$ I	$11^2 = \square \rightarrow$ T	$6^3 = \square \rightarrow$ X	$13^2 = \square \rightarrow$ D
$2^3 = \square \rightarrow$ E	$18^2 = \square \rightarrow$ W	$2^5 = \square \rightarrow$ F	$3^4 = \square \rightarrow$ C
$7^2 = \square \rightarrow$ N	$2^7 = \square \rightarrow$ K	$7^3 = \square \rightarrow$ O	$15^2 = \square \rightarrow$ A
$8^2 = \square \rightarrow$ R	$10^2 = \square \rightarrow$ U		

Scratch space:

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

A scale in the pantry has weights on both sides. Solve this two-step equation to balance the scale and reveal the final clue.

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:

$2x + 3 = 25, x = \boxed{}$

$2x + 6 = 24, x = \boxed{}$

$4x + 2 = 34, x = \boxed{}$

$2x + 3 = 11, x = \boxed{}$

$2x + 10 = 34, x = \boxed{}$

$4x + 12 = 20, x = \boxed{}$

$2x + 10 = 24, x = \boxed{}$

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

$3x + 1 = 16, x = \boxed{}$

$6x + 4 = 64, x = \boxed{}$

$3x + 7 = 25, x = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain squeezed inside a tiny delivery box, then rolled a crinkle ball down the hallway.
2. The villain leaped over the high security fence, then shined a laser pointer to confuse the cameras.
3. The villain slipped through the narrow vents, then dropped a catnip cushion to soothe the watchdogs.
4. The villain squeezed inside a tiny delivery box, then shined a laser pointer to confuse the cameras.
5. The villain leaped over the high security fence, then swung a feather wand to bypass the motion sensors.
6. The villain chased a reflection across the gallery roof, then swung a feather wand to bypass the motion sensors.
7. The villain slipped through the narrow vents, then shined a laser pointer to confuse the cameras.
8. The villain tangled up the laser grid with yarn, then swung a feather wand to bypass the motion sensors.
9. The villain squeezed inside a tiny delivery box, then dropped a catnip cushion to soothe the watchdogs.
10. The villain chased a reflection across the gallery roof, then rolled a crinkle ball down the hallway.
11. The villain slipped through the narrow vents, then swung a feather wand to bypass the motion sensors.
12. The villain chased a reflection across the gallery roof, then tossed a squeaky mouse to distract the guard.

Answer Key

The Great Whisker City Heist

Culprit: Mittens

Box Squeezing · Crinkle Ball · Uses Left Paw · Sleek Tuxedo Fur · Smelly Tuna Scent

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

Clue 1 (Integers): "THE VILLAIN DOES NOT USE A LASER POINTER"

$(-10) + 19 = 9$ (T) · $5 - (-11) = 16$ (H) · $(-2) + 21 = 19$ (E) · $(-1) + 19 = 18$ (P) · $19 - (-3) = 22$ (O) · $20 - (-10) = 30$ (R) · $(-14) + 35 = 21$ (D) · $8 - (-4) = 12$ (I) · $(-10) + 12 = 2$ (N) · $(-4) + 11 = 7$ (V) · $(-14) + 15 = 1$ (U) · $4 - (-11) = 15$ (A) · $(-11) + 28 = 17$ (L) · $4 - (-2) = 6$ (S)

Clue 2 (Percentages): "THE CULPRIT SWIPED WITH THE LEFT PAW"

50% of 34 = 17 (T) · 10% of 230 = 23 (I) · 10% of 340 = 34 (A) · 10% of 160 = 16 (E) · 50% of 106 = 53 (W) · 50% of 56 = 28 (L) · 20% of 40 = 8 (D) · 5% of 800 = 40 (S) · 50% of 62 = 31 (U) · 20% of 150 = 30 (P) · 5% of 500 = 25 (H) · 25% of 128 = 32 (C) · 60% of 35 = 21 (F) · 10% of 510 = 51 (R)

Clue 3 (Order of operations): "THE THIEF CANNOT RESIST THE SMELLY TUNA"

$12 \times 7 - 28 = 56$ (T) · $6 \times 4 - 13 = 11$ (O) · $11 \times 3 - 14 = 19$ (I) · $9 \times 12 - 17 = 91$ (H) · $56 + 7 \times 9 = 119$ (L) · $11 \times 5 - 21 = 34$ (E) · $56 + 8 \times 5 = 96$ (R) · $2 + 5 \times 2 = 12$ (C) · $45 + 9 \times 5 = 90$ (M) · $12 \times 9 - 2 = 106$ (N) · $12 \times 8 - 8 = 88$ (U) · $3 + 7 \times 6 = 45$ (F) · $14 + 5 \times 7 = 49$ (S) · $10 \times 2 - 11 = 9$ (Y) · $11 \times 10 - 21 = 89$ (A)

Clue 4 (Exponents): "SLEEK BLACK AND WHITE TUXEDO FUR WAS LEFT"

$5^3 = 125$ (S) · $2^2 = 4$ (L) · $3^2 = 9$ (B) · $20^2 = 400$ (H) · $4^4 = 256$ (I) · $11^2 = 121$ (T) · $6^3 = 216$ (X) · $13^2 = 169$ (D) · $2^3 = 8$ (E) · $18^2 = 324$ (W) · $2^5 = 32$ (F) · $3^4 = 81$ (C) · $7^2 = 49$ (N) · $2^7 = 128$ (K) · $7^3 = 343$ (O) · $15^2 = 225$ (A) · $8^2 = 64$ (R) · $10^2 = 100$ (U)

Clue 5 (Two-step equations): surviving statement is box 1 → Mittens

$2x + 3 = 25, x = 11$ · $2x + 6 = 24, x = 9$ · $4x + 2 = 34, x = 8$ · $2x + 3 = 11, x = 4$ · $2x + 10 = 34, x = 12$ · $4x + 12 = 20, x = 2$ · $2x + 10 = 24, x = 7$ · $4x + 8 = 20, x = 3$ · $3x + 1 = 16, x = 5$ · $6x + 4 = 64, x = 10$ · $3x + 7 = 25, x = 6$