The Case of the Frozen Trophy

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone stole the Golden Skate Trophy right before the final skate-off! The head judge found icy tracks leading away from the display case. It is up to you to find the ice saboteur before the closing ceremony starts!

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 ice saboteur is _____

Possible suspects

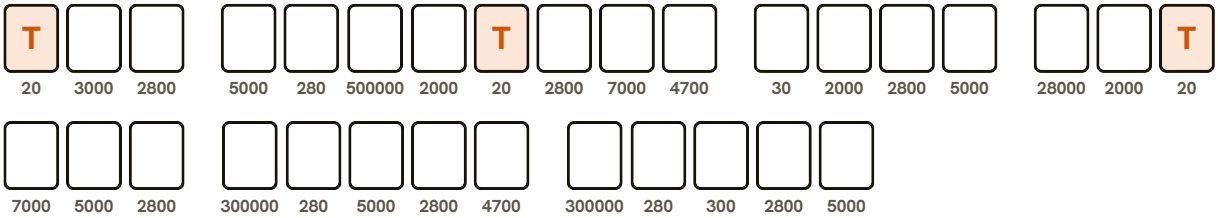
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	SIGNATURE MOVE	SKATE GADGET	SKATER TYPE	HAIR STYLE	DISTRACTION
Ron	triple axel	turbo boosters	skater girl	braided bun	melted slush
Kai	hydroblade	music player guard	skater boy	spiky gel	melted slush
Meg	hydroblade	sparkler boots	skater girl	slicked ponytail	melted slush
Sam	flying sit spin	music player guard	skater boy	braided bun	loud cheering
Ava	triple axel	sparkler boots	skater boy	spiky gel	bright flashlights
Eli	flying sit spin	sparkler boots	skater girl	braided bun	melted slush
Mia	death spiral	laser lace ties	skater girl	spiky gel	loud cheering
Tim	death spiral	sparkler boots	skater boy	spiky gel	loud cheering
Max	hydroblade	turbo boosters	skater girl	braided bun	melted slush
Sue	death spiral	turbo boosters	skater girl	braided bun	melted slush
Ian	hydroblade	turbo boosters	skater girl	braided bun	bright flashlights
Roy	death spiral	laser lace ties	skater girl	slicked ponytail	bright flashlights
Joy	hydroblade	laser lace ties	skater girl	braided bun	melted slush
Ted	camel spin	laser lace ties	skater girl	spiky gel	melted slush
Fay	death spiral	sparkler boots	skater girl	braided bun	bright flashlights
Ben	triple axel	music player guard	skater boy	braided bun	loud cheering
Dan	triple axel	laser lace ties	skater girl	slicked ponytail	melted slush
Leo	camel spin	heated blades	skater girl	slicked ponytail	bright flashlights
Jax	hydroblade	heated blades	skater boy	spiky gel	melted slush
Amy	triple axel	turbo boosters	skater boy	braided bun	melted slush
Zoe	hydroblade	heated blades	skater boy	spiky gel	bright flashlights

CLUE 1 Rounding

> The arena scoreboard flashed with a rounded number. We can round this up to find our first clue!

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



Round 18 to the nearest ten		T	Round 259 to the nearest hundred		C
Round 28,421 to the nearest thousand		N	Round 340,775 to the nearest hundred thousand		L
Round 278 to the nearest ten		A	Round 1,694 to the nearest thousand		O
Round 2,586 to the nearest thousand		H	Round 2,830 to the nearest hundred		E
Round 5,123 to the nearest thousand		S	Round 522,058 to the nearest hundred thousand		B
Round 4,680 to the nearest hundred		R	Round 34 to the nearest ten		D
Round 6,611 to the nearest thousand		U			

Scratch space:

CLUE 2 Addition

We found two piles of shiny skate guards left by the rink. Let us add them together to decode the suspect's type.

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

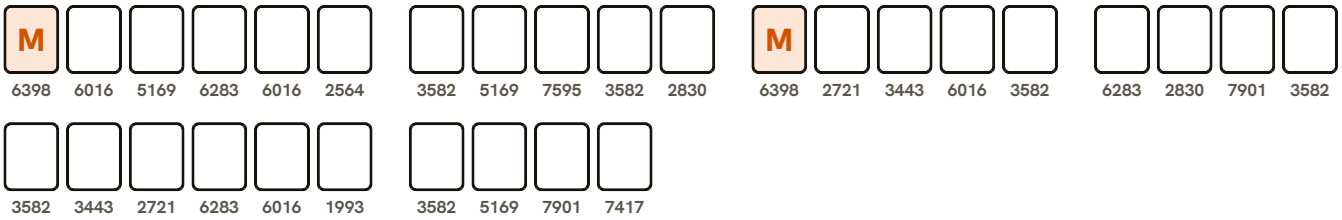
2653 + 5484 =		A	1743 + 2567 =		S	2327 + 4567 =		G
2448 + 2510 =		L	3193 + 2708 =		T	1441 + 1069 =		I
1080 + 1057 =		H	1508 + 1422 =		E	1309 + 2186 =		W
1945 + 1854 =		R	2894 + 2978 =		N	3796 + 3760 =		K

Scratch space:

CLUE 3 Subtraction

> The skater's routine was cut short. Subtract the lost seconds from the total time to unlock a secret about their hair.

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



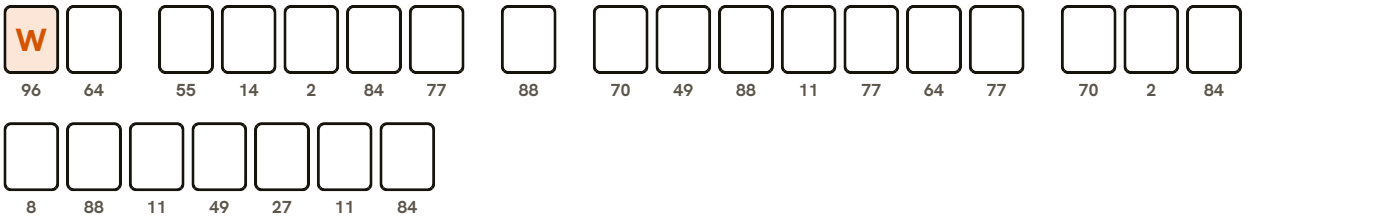
7607 - 1209 =		M	6104 - 2661 =		K	8514 - 919 =		U
5924 - 3094 =		H	4972 - 1390 =		S	9115 - 3099 =		E
5608 - 439 =		L	2731 - 10 =		A	11147 - 3246 =		I
4616 - 2623 =		R	8332 - 915 =		P	4932 - 2368 =		D
9021 - 2738 =		T					

Scratch space:

CLUE 4 Multiplication facts (1-12)

> The equipment room has neat rows of skates. Multiply the skate boxes in each row to find the saboteur's weakness.

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



12 × 8 =		W	7 × 7 =		R	9 × 3 =		P
8 × 11 =		A	8 × 8 =		E	11 × 7 =		D
12 × 7 =		N	11 × 5 =		F	2 × 1 =		U
1 × 8 =		H	11 × 1 =		I	2 × 7 =		O
7 × 10 =		B						

Scratch space:

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

> We need to share the extra participation ribbons equally among the skating teams. Divide them up to reveal the final hint.

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:

8 ÷ 1 = ☐	48 ÷ 4 = ☐	24 ÷ 6 = ☐
49 ÷ 7 = ☐	11 ÷ 1 = ☐	24 ÷ 4 = ☐
36 ÷ 4 = ☐	10 ÷ 10 = ☐	10 ÷ 5 = ☐
15 ÷ 5 = ☐	60 ÷ 12 = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain drops into a flying sit spin, then melts the ice with heated blades.
2. The villain leaps into a triple axel, then blinds the crowd with sparkler boots.
3. The villain carves a deep death spiral, then blasts loud tunes from a music player guard.
4. The villain drops into a flying sit spin, then blinds the crowd with sparkler boots.
5. The villain leaps into a triple axel, then zaps the scoreboard with laser lace ties.
6. The villain carves a deep death spiral, then zaps the scoreboard with laser lace ties.
7. The villain leaps into a triple axel, then blasts loud tunes from a music player guard.
8. The villain carves a deep death spiral, then zooms away on turbo boosters.
9. The villain drops into a flying sit spin, then zaps the scoreboard with laser lace ties.
10. The villain leaps into a triple axel, then zooms away on turbo boosters.
11. The villain carves a deep death spiral, then blinds the crowd with sparkler boots.
12. The villain leans low in a hydroblade, then zooms away on turbo boosters.

TEACHER / PARENT

Answer Key

The Case of the Frozen Trophy

Culprit: Ron

triple axel · turbo boosters · skater girl · braided bun · melted slush

Trail: Start 21 → Clue 1 16 → Clue 2 8 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE SABOTEUR DOES NOT USE LASER LACES"

Round 18 to the nearest ten = 20 (T) · Round 259 to the nearest hundred = 300 (C) · Round 28,421 to the nearest thousand = 28000 (N) · Round 340,775 to the nearest hundred thousand = 300000 (L) · Round 278 to the nearest ten = 280 (A) · Round 1,694 to the nearest thousand = 2000 (O) · Round 2,586 to the nearest thousand = 3000 (H) · Round 2,830 to the nearest hundred = 2800 (E) · Round 5,123 to the nearest thousand = 5000 (S) · Round 522,058 to the nearest hundred thousand = 500000 (B) · Round 4,680 to the nearest hundred = 4700 (R) · Round 34 to the nearest ten = 30 (D) · Round 6,611 to the nearest thousand = 7000 (U)

Clue 2 (Addition): "A SKATER GIRL WAS SEEN AT THE RINKS"

2653 + 5484 = 8137 (A) · 1743 + 2567 = 4310 (S) · 2327 + 4567 = 6894 (G) · 2448 + 2510 = 4958 (L) · 3193 + 2708 = 5901 (T) · 1441 + 1069 = 2510 (I) · 1080 + 1057 = 2137 (H) · 1508 + 1422 = 2930 (E) · 1309 + 2186 = 3495 (W) · 1945 + 1854 = 3799 (R) · 2894 + 2978 = 5872 (N) · 3796 + 3760 = 7556 (K)

Clue 3 (Subtraction): "MELTED SLUSH MAKES THIS SKATER SLIP"

7607 - 1209 = 6398 (M) · 6104 - 2661 = 3443 (K) · 8514 - 919 = 7595 (U) · 5924 - 3094 = 2830 (H) · 4972 - 1390 = 3582 (S) · 9115 - 3099 = 6016 (E) · 5608 - 439 = 5169 (L) · 2731 - 10 = 2721 (A) · 11147 - 3246 = 7901 (I) · 4616 - 2623 = 1993 (R) · 8332 - 915 = 7417 (P) · 4932 - 2368 = 2564 (D) · 9021 - 2738 = 6283 (T)

Clue 4 (Multiplication facts (1-12)): "WE FOUND A BRAIDED BUN HAIRPIN"

12 × 8 = 96 (W) · 7 × 7 = 49 (R) · 9 × 3 = 27 (P) · 8 × 11 = 88 (A) · 8 × 8 = 64 (E) · 11 × 7 = 77 (D) · 12 × 7 = 84 (N) · 11 × 5 = 55 (F) · 2 × 1 = 2 (U) · 1 × 8 = 8 (H) · 11 × 1 = 11 (I) · 2 × 7 = 14 (O) · 7 × 10 = 70 (B)

Clue 5 (Division facts (1-12)): surviving statement is box 10 → Ron

8 ÷ 1 = 8 · 48 ÷ 4 = 12 · 24 ÷ 6 = 4 · 49 ÷ 7 = 7 · 11 ÷ 1 = 11 · 24 ÷ 4 = 6 · 36 ÷ 4 = 9 · 10 ÷ 10 = 1 · 10 ÷ 5 = 2 · 15 ÷ 5 = 3 · 60 ÷ 12 = 5