

Minor Differences

Nick Mitchell

Answer: **ARMY HELMET**

There are two sets of prompts; the left side are all cryptic clues, and the right are normal. With some smart searching, one can determine that the answers to both sides are all the names of [minor planets](#) as designated by the International Astronomical Union. The clues are numbered so that the complete answer set is in alphabetical order, and each planet on the left has a paired planet on the right that is an anagram plus an additional letter.

Cryptic Clue (Left Side, Shorter Name)	Minor Body	Normal Clue (Right Side, Longer Name)	Minor Body
1. Help a princess of Ethiopia (4)	AIDA	4. Moon-associated Roman deity (5)	DIANA
14. Track enamel returning without me (4)	LANE	2. First moonwalker's second name (5)	ALDEN
9. Two girls form a fabric chain (2-3)	JO-ANN	3. Scale that's used once in a red moon (6)	DANJON
5. Bad urge bothered a sainted princess (7)	EDBURGA	7. Widow who founded Nivelles Abbey (8)	IDUBERGA
13. Oddly, loathe this Saarinen-designed town hall (5)	LAHTI	6. Finnish guardian gnome and exhibition center (6)	HALTIA
8. Prince Regent at heart was a playwright (4)	INGE	23. All-time top-selling live album's opening track (5)	SIGNE
12. Instant king sings a new anthem at first (5)	KSANA	10. American home of one who "fell from a star" (6)	KANSAS
24. Half-spinner's followed by a fish dancing (7)	YOSAKOI	11. Japanese home of a "camp with pure spring" (8)	KIYOSATO
18. Chap hiding bad dog behaviorist (6)	MILLAN	15. Site of Ronchinne Castle in Belgium (7)	MAILLEN
16. Look: a samurai holds back the Empress (6)	MASAKO	22. Czech snowboarder who "fools around" (7)	SAMKOVA
17. Singer with 1001000 amps? (4)	MIKA	19. Final boss in <i>The King of Fighters X</i> (5)	MUKAI
21. Limits train within Paris limits (4)	PELS	20. Sheep- and cattle-associated Roman deity (5)	PALES

As clued by the second part of the title, finding the differences in ID numbers for each pair yields the ID number for another minor planet.

Minor Body 1	ID#	Minor Body #2	ID#	Diff.	New Body
AIDA	861	DIANA	78	783	NORA
LANE	4770	ALDEN	2941	1829	DAWSON
JO-ANN	2316	DANJON	1594	722	FRIEDA
EDBURGA	413	IDUBERGA	963	550	SENTA
LAHTI	1498	HALTIA	1460	38	LEDA
INGE	2494	SIGNE	459	2035	STEARNS
KSANA	4997	KANSAS	3124	1873	AGENOR
YOSAKOI	10547	KIYOSATO	5488	5059	SAROMA
MILLAN	4168	MAILLEN	3274	894	ERDA
MASAKO	9190	SAMKOVA	15384	6194	DENALI
MIKA	4557	MUKAI	4750	193	AMBROSIA
PELS	1667	PALES	49	1618	DAWN

This process reduces the 24 original minor planets to 12, and this can be done once more with the new minor planets; the pairs are now anagrams with two extra letters in one member.

Minor Body 1	ID#	Minor Body #2	ID#	Diff.	New Body
NORA	783	AGENOR	1873	1090	SUMIDA
DAWN	1618	DAWSON	1829	211	ISOLDA
ERDA	894	FRIEDA	722	172	BAUCIS
SENTA	550	STEARNS	2035	1485	ISA
SAROMA	5059	AMBROSIA	193	4866	BADILLO
LEDA	38	DENALI	6194	6156	DALL

The 12 minor planets have been reduced to 6, and can be again to 4 by repeating the process. The anagrams now have three additional letters. In this special case, 1485 Isa is used three times as the shorter-named member of a pair.

Minor Body 1	ID#	Minor Body #2	ID#	Diff.	New Body
DALL	6156	BADILLO	4866	1290	ALBERTINE
ISA	1485	BAUCIS	172	1313	BERNA
ISA	1485	ISOLDA	211	1274	DELPORTIA
ISA	1485	SUMIDA	1090	395	DELIA

Repeat the operation one final time to reduce these 4 to 2; pairs have four letters different.

Minor Body 1	ID#	Minor Body #2	ID#	Diff.	New Body
DELIA	395	DELPORTIA	1274	879	RICARDA
BERNA	1313	ALBERTINE	1290	23	THALIA

At last, we come to the boxes at the bottom; 879 Ricarda and 23 Thalia match the lengths we need. Multiplying these ID numbers gives us 20217 KathyClemmer, which fits the boxes on the other side of the equation. Extracting the letters in the given order yields our final answer, and some protection from the flying amusement ride parts: an **ARMY HELMET**.

Author's Notes

Nick: This puzzle originally had all-cryptic clues, which didn't quite work. Then we tried changing over to all-trivia clues, which didn't quite work either. But using one set for the shorter names and one set for the longer ones seems to have hit the sweet spot. At one point we planned to mention "three Independent Spin Axes" in the flavortext as a hint that ISA had to be used three times, but eventually decided it wasn't necessary.