

Space Weather Crossword

Evaluate simple expressions involving positive and negative numbers such as $-3(-12 + 9) =$ to decode a crossword puzzle.

Scientists use mathematics to analyze data, and to build models of the phenomena they are studying. Can you solve this crossword puzzle using the mathematical clues provided? When you're finished, color the blank squares with your favorite aurora colors!

Word Bank

+4	proton	11	photons	+6	ionosphere	-1	plasma
+3	radiation	0	flares	-10	field	-7	magnetism
-6	earth	-8	solar	-13	envelope	-2	current
-3	aurora	+13	oval	+2	corona	10	humanity
+1	rays	+9	ions	-11	Plasmasphere	-26	echos
-9	polarity	+25	ENA	-17	CMEs	+26	UT
-21	FAC	-5	IMAGE	-4	neutron	+8	electrons
+14	watt	17	UV	+7	crown	+5	magnetosphere

The numerical answer to each problem below will tell you which word to use in the word bank to fill in the row or column with the indicated letter.

DOWN:

- | | | | |
|-----|----------------------------|-----|---------------------------------------|
| 9) | $-2 (-5 + 3) =$ | 16) | $-3 (-12 + 9) =$ |
| 12) | $-4 (3 - 1) =$ | 18) | $+2 - 3 + 5 - 10 + 2 =$ |
| 5) | $+2 (-6 + 3) + 4 =$ | 19) | $+4 (-5 + 3) - (-7 + 6) =$ |
| 13) | $-3 (-5 + 2) + (-4 + 3) =$ | 20) | $+3 (-8 + 6) - 3 =$ |
| 7) | $+5 - (-8 + 2) =$ | 22) | $+4 (8 - 3) - 3 (+6 - 8 + 12) =$ |
| 14) | $-4 (7 - 3) + (8 - 3) =$ | 23) | $+2 (+8 - 5 + 10) - (+10 + 5 - 2) =$ |
| 15) | $+1 - 1 + 3 + 4 - 5 - 8 =$ | 10) | $-2 (-3 + 2 - 5 - 6) + 2 - 2 (+26) =$ |

ACROSS:

- | | | | |
|----|-------------------------------|-----|--------------------------------|
| 1) | $+2 (-3 + 8) - 5 =$ | 7) | $(+1 - 1) + (+1 - 2) =$ |
| 2) | $+3 (+2 + 1) - 2 (-3 + 9) =$ | 8) | $+4 (+5 - 2) - (+9) =$ |
| 3) | $-15 (-2 + 3) + 3 (-2 + 9) =$ | 11) | $+5 (+8 - 5) - 4 (-6 + 8) =$ |
| 4) | $-1 + 1 - 1 + 1 - 1 + 1 =$ | 17) | $-1 + 1 - 1 + 1 + 1 - 1 + 1 =$ |
| 5) | $-6 + (+11 - 3) =$ | 21) | $+3 (-2 + 8) + (-12 + 4) =$ |
| 6) | $-3 (-8 + 11) + 4 =$ | 24) | $-5 + 2 (-8 + 4) =$ |