



Order of Operations & Absolute Value

KEY IDEA

Operations are done in a fixed order so that everyone gets the same answer: grouping symbols first, then exponents, then multiplication and division left to right, then addition and subtraction left to right. Absolute value bars are grouping symbols — simplify what is inside completely, then take the distance from zero, which is never negative.

How to do it

1. Simplify inside every grouping symbol, including absolute value bars.
2. Apply exponents. Note that -4^2 means $-(4^2) = -16$, while $(-4)^2 = 16$.
3. Multiply and divide, moving left to right.
4. Add and subtract, moving left to right.

Worked examples

Example 1. $6(-4 + 4)^2 - |2 - 4|$

-2

Example 2. $|-3| \cdot 5 - 3^3$

-12

Example 3. $-4^2 + 6(6 - 5)$

-10

Example 4. $(2 \cdot 3 - 1) \div 5 + |-1|$

2





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Directions: Simplify each expression. Show every step in the space provided.

1. $6(-8 + 6)^2 - |4 - 8|$

2. $-5^2 + 3(3 - 4)$

3. $-4^2 + 6(6 - 8)$

4. $|-6| \cdot 3 - 3^3$

5. $(5 \cdot 3 - 9) \div 3 + |-9|$

6. $2(-4 + 3)^2 - |4 - 4|$

7. $-5^2 + 3(3 - 6)$

8. $-2^2 + 4(4 - 9)$

9. $2(-5 + 4)^2 - |4 - 5|$

10. $|-2| \cdot 5 - 3^3$

11. $6(-2 + 4)^2 - |3 - 2|$

12. $|-9| \cdot 6 - 3^3$

13. $-3^2 + 5(5 - 9)$

14. $-4^2 + 4(4 - 6)$

15. $|-3| \cdot 4 - 4^3$

16. $-3^2 + 3(3 - 4)$

17. $-3^2 + 5(5 - 6)$

18. $|-5| \cdot 4 - 4^3$

19. $(8 \cdot 6 - 6) \div 2 + |-6|$

20. $(4 \cdot 4 - 8) \div 2 + |-8|$

