

Name _____

Order of Operations

Essential Question How can you use the order of operations to find the value of expressions?

UNLOCK the Problem REAL WORLD

At a visit to the Book Fair, Jana buys 7 hardcover books and 5 paperback books. She is going to give an equal number of books to each of her three cousins. How many books will each of Jana's cousins get?

To find the value of an expression involving parentheses, you can use the order of operations. Remember, the order of operations is a special set of rules that give you the order in which calculations are done in an expression.

- First, perform operations inside the parentheses.
- Then, multiply and divide from left to right.
- Finally, add and subtract from left to right.

↑ Use the order of operations to find the value of $(7 + 5) \div 3$.

STEP 1

Perform operations in parentheses.

$$(7 + 5) \div 3$$

$$\underline{\hspace{2cm}} \div 3$$

STEP 2

Use the order of operations. In this case, divide.

$$12 \div 3$$

$$\underline{\hspace{2cm}}$$

So, each of Jana's cousins will get 4 books.

- What operation can you use to find the total number of books that Jana buys?

- What operation can you use to find how many books each of Jana's cousins gets?

- **What if** Jana decides to keep 3 books for herself? How will this change the expression? How many books will each of Jana's cousins get?

Math Talk

What operation should you do first to find the values of $(6 + 2) \times 3$ and $6 + (2 \times 3)$? What is the value of each expression?

Share and Show



Write *correct* if the operations are listed in the correct order.
If not correct, write the correct order of operations.

1. $(4 + 5) \times 2$ multiply, add

2. $8 \div (4 \times 2)$ multiply, divide

3. $12 + (16 \div 4)$ add, divide

4. $9 + 2 \times (3 - 1)$ add, multiply, subtract

Follow the order of operations to find the value of the expression.
Show each step.

5. $6 + (2 \times 5)$

6. $18 - (12 \div 4)$

7. $8 \times (9 - 3)$

8. $(12 + 8) \div 2 \times 3$

On Your Own

Follow the order of operations to find the value of the expression.
Show each step.

9. $6 + (9 \div 3)$

10. $(3 \times 6) \div 2$

11. $(49 \div 7) + 5$

12. $9 \times (8 - 2)$

13. $45 \div (17 - 2)$

14. $(32 + 4) \div 9 - 2$

15. $8 \times 9 - (12 - 8)$

16. $(36 - 4) + 8 \div 4$

Problem Solving



17. Mr. Randall bought 4 shirts, which were on sale. The shirts were originally priced \$20. The sales price of the shirts was \$5 less than the original price. Write and find the value of an expression for the total amount that Mr. Randall paid for the shirts.
