

MAIN IDEA

- Find the value of expressions using the order of operations.

BUILD YOUR VOCABULARY (pages 2–3)

A **numerical expression** is a combination of and .

The **order of operations** tells which operation to perform first so that everyone gets the same .

EXAMPLES Use Order of Operations

Find the value of each expression.

1 $30 - 10 + 9$

$$30 - 10 + 9 = 20 + \boxed{} \quad \text{Subtract } \boxed{} \text{ from } \boxed{} \text{ first.}$$

$$= \boxed{} \quad \text{Add } \boxed{} \text{ and } \boxed{}.$$

2 $4 + (10 - 3)$

$$4 + (10 - 3) = \boxed{} \quad \text{Subtract 3 from 10.}$$

$$= \boxed{} \quad \text{Add } \boxed{} \text{ and } \boxed{}.$$

KEY CONCEPT**Order of Operations**

- Simplify the expressions inside grouping symbols, like parentheses.
- Find the value of all powers.
- Multiply and divide in order from left to right.
- Add and subtract in order from left to right.

Check Your Progress

Find the value of each expression.

a. $21 - 6 + 9$

b. $6 + (8 - 4)$

WRITE IT

Why is it important to have an order of operations when evaluating expressions?

EXAMPLES Parentheses and Exponents

Find the value of each expression.

1 $90 \div 3 + (3 - 2) - 20$

$$90 \div 3 + (3 - 2) - 20$$

$$= 90 \div 3 + \boxed{} - 20$$
 Subtract $\boxed{}$ from $\boxed{}$.

$$= \boxed{} - 20$$
 Divide $\boxed{}$ by $\boxed{}$.

$$= \boxed{}$$
 Add $\boxed{}$ and $\boxed{}$.

$$= \boxed{}$$
 Subtract $\boxed{}$ from $\boxed{}$.

4 $4^3 + 5 \times 2 - 1$

$$4^3 + 5 \times 2 - 1$$

$$= \boxed{} + 5 \times 2 - 1$$
 Find $\boxed{}$.

$$= \boxed{} - 1$$
 Multiply $\boxed{}$ and $\boxed{}$.

$$= \boxed{}$$
 Add $\boxed{}$ and $\boxed{}$.

$$= \boxed{}$$
 Subtract $\boxed{}$ from $\boxed{}$.

REVIEW IT

Show 4 cubed as a power and then as a product of factors. What is the value of the number?
(Lesson 1-3)

Check Your Progress Find the value of each expression.

a. $85 \div 5 + 14 \times (12 - 8)$

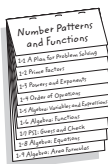
b. $4 \times 2^4 + 7$

EXAMPLE

FOLDABLES

ORGANIZE IT

On the Lesson 1-4 tab, write the order of operations for evaluating expressions. Use your own examples to show how the rules are applied.



- 5 MONEY** Trina, her two parents, and her grandmother eat lunch at a diner. Each person orders a soda, a sandwich, fries, and dessert. Write an expression for the total cost of the meal. Then find the total cost.

Cost of Lunch at a Diner				
Item	soda	sandwich	fries	desserts
Cost	\$1	\$5	\$2	\$3

To find the total cost, write an expression and then find its value using the order of operations.

Words ▼ Expression	cost of 4 sodas	plus	cost of 4 sandwiches	plus	cost of 4 fries	plus	cost of 4 desserts
		+		+		+	

$$4 \times \$1 + 4 \times \$5 + 4 \times \$2 + 4 \times \$3$$

$$= \boxed{} 4 \times \$5 + 4 \times \$2 + 4 \times \$3$$

$$= \boxed{} 4 \times \$2 + 4 \times \$3$$

$$= \boxed{} 4 \times \$3$$

$$= \boxed{}$$

$$= \boxed{}$$

The total cost of the meal is .

Check Your Progress

CLOTHING Maris is shopping at a new clothing store. T-shirts are priced at \$9 each, jeans are priced at \$17 per pair, and sweaters are priced at \$14. Maris buys 4 T-shirts, 2 pairs of jeans, and 3 sweaters. Write an expression for the total cost of her purchases. Then find the total cost.

HOMEWORK
ASSIGNMENT

Page(s):

Exercises: