LESSON MAKER PRO

Expression Detectives

Group numbers, use properties, and solve.

GRADE 5 · 5.OA.A.1

5.OA.A.1 "Write, explain, and evaluate simple numerical expressions involving the four operations to solve up to two-step problems. Include expressions involving parentheses, brackets, or braces, using commutative, associative..."

NAME _____ DATE _____

THE BIG IDEA

Calculate inside parentheses, brackets, or braces first. Then multiply or divide before you add or subtract. You can also use number properties to rewrite an expression without changing its value.

WORKED EXAMPLE

Evaluate (27 + 33) / 12.

1. Add inside the parentheses: 27 + 33 = 60.
2. Divide: 60 / 12 = 5.

Answer: 5

PRACTICE 6 problems

1 Evaluate 9 + (28 / 7).

ANSWER _____

2 Evaluate [36 - 18] / 2.

ANSWER _____

3 Evaluate {56 / (11 - 3)}.

ANSWER _____

4 Use the commutative property to rewrite 16 + 29 with the addends switched. Then find its value.

ANSWER _____

5 Use the distributive property to write 8 * (16 + 2) as a sum of two products. Then find its value.

ANSWER _____

6 Use the associative property to regroup (11 + 19) + 21 without changing the order of the numbers. Then find its value.

ANSWER _____

APPLY IT Show your work

1 At a school game night, 8 teams each earn 9 tickets. The host gives away 17 tickets as prizes. How many tickets remain? Write an expression and solve it.

WORK SPACE

ANSWER _____

2 A craft club has 38 sticker sheets in one box and 26 in another. The club splits all the sheets equally among 8 tables. How many sheets does each table get? Write an expression and solve it.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A snack stand has 18 bags with 8 pretzels in each bag and 22 more bags with 8 pretzels in each bag. Write an expression using brackets for the total number of pretzels. Use the distributive property to write an equivalent expression, then find the total. Explain in one sentence why the expressions match.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Detectives

GRADE 5 · 5.OA.A.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Evaluate 9 + (28 / 7).	**13**
2	Evaluate [36 - 18] / 2.	**9**
3	Evaluate {56 / (11 - 3)}.	**7**
4	Use the commutative property to rewrite 16 + 29 with the addends switched. Then find its value.	**29 + 16 = 45**
5	Use the distributive property to write 8 * (16 + 2) as a sum of two products. Then find its value.	**8 * 16 + 8 * 2 = 144**
6	Use the associative property to regroup (11 + 19) + 21 without changing the order of the numbers. Then find its value.	**11 + (19 + 21) = 51**

PART 2 · APPLY IT

1. **8 * 9 - 17 = 55 tickets** The teams earn 8 * 9 = 72 tickets. Subtract the 17 tickets given away to get 55.
2. **(38 + 26) / 8 = 8 sheets per table** Add the sheets first to get 64. Divide 64 by 8 to get 8 sheets per table.

CHALLENGE

8 * [18 + 22] = 8 * 18 + 8 * 22 = 320 pretzels. Both expressions count 8 pretzels in each of the 18 bags and each of the 22 bags.

Accept equivalent expressions that preserve the quantities and operations. For the challenge, the explanation should show that both expressions count the same two groups of bags.