LESSON MAKER PRO

Expression Detective

Show the calculations without finding the final value.

GRADE 5 · 5.AT.A.2

5.AT.A.2 "Write expressions that record calculations with numbers and interpret numerical expressions without evaluating them."

NAME _____ DATE _____

GROUP IT FIRST

Parentheses show which calculation to do first. Write or describe what happens first and next, but leave the expression unsolved.

WORKED EXAMPLE

Subtract 9 from 27, then multiply the result by 4. Write an expression without calculating.

1. Write the subtraction first: 27 - 9.
2. Group it to show that it happens first: (27 - 9).
3. Multiply that group by 4: (27 - 9) × 4.

Answer: (27 - 9) × 4

PRACTICE 6 problems

1 Add 8 and 5, then multiply the sum by 3. Write an expression without calculating.

ANSWER _____

2 Describe the two calculations in 6 × (15 - 2) in order. Do not calculate.

ANSWER _____

3 Divide 32 by the sum of 7 and 1. Write an expression without calculating.

ANSWER _____

4 Describe the two calculations in (24 / 6) + 11 in order. Do not calculate.

ANSWER _____

5 Subtract the product of 12 and 5 from 40. Write an expression without calculating.

ANSWER _____

6 Describe the two calculations in (18 + 10) / 2 in order. Do not calculate.

ANSWER _____

APPLY IT Show your work

1 A gaming club has 3 teams. Each team earns 16 points in one round and 8 points in the next round. Write an expression for the points all the teams earn in both rounds. Do not calculate.

WORK SPACE

ANSWER _____

2 Maya has 50 arcade tokens. She plays 2 games that cost 13 tokens each. Write an expression for the tokens she has left. Do not calculate.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Five teams each have 6 players and 2 coaches. Which expression shows the total number of people on the teams: (6 + 2) × 5 or 6 + (2 × 5)? Explain why the other expression does not match. Do not calculate.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Detective

GRADE 5 · 5.AT.A.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Add 8 and 5, then multiply the sum by 3. Write an expression without calculating.	**(8 + 5) × 3**
2	Describe the two calculations in 6 × (15 - 2) in order. Do not calculate.	**First subtract 2 from 15. Then multiply the difference by 6.**
3	Divide 32 by the sum of 7 and 1. Write an expression without calculating.	**32 / (7 + 1)**
4	Describe the two calculations in (24 / 6) + 11 in order. Do not calculate.	**First divide 24 by 6. Then add 11.**
5	Subtract the product of 12 and 5 from 40. Write an expression without calculating.	**40 - (12 × 5)**
6	Describe the two calculations in (18 + 10) / 2 in order. Do not calculate.	**First add 18 and 10. Then divide the sum by 2.**

PART 2 · APPLY IT

1. **3 × (16 + 8)** Add the points earned by one team in the two rounds, then multiply by the number of teams.
2. **50 - (2 × 13)** Multiply the number of games by the tokens per game, then subtract that cost from 50.

CHALLENGE

(6 + 2) × 5 matches because each team has 6 players and 2 coaches. The other expression counts 6 players only once instead of once for each team.

Accept equivalent expressions that keep the same calculation order, and descriptions that clearly name the operations in order. Students should not evaluate the expressions.