LESSON MAKER PRO

Expression Detective

Name the parts, then find the value.

GRADE 6 · 6.EE.2b

6.EE.2b "Write, read, and evaluate expressions in which letters stand for numbers. Identify parts of an expression using mathematical terms (sum, difference, term, product, factor, quotient, coefficient, constant)."

NAME _____ DATE _____

PARTS AND VALUES

A coefficient multiplies a letter, and a constant stands alone. Terms are parts joined by addition or subtraction, while factors are parts multiplied together. To evaluate an expression, replace the letter with its value and follow the order of operations.

WORKED EXAMPLE

In 11x + 7, identify the coefficient and constant. Then evaluate the expression when x = 3.

1. The coefficient is 11, and the constant is 7.
2. Replace x with 3: 11(3) + 7.
3. Multiply: 33 + 7.
4. Add: 40.

Answer: Coefficient: 11; constant: 7; value: 40.

PRACTICE 6 problems

1 In 4x + 9, identify the coefficient and constant.

ANSWER _____

2 In 18 - 6x, identify the difference and the product.

ANSWER _____

3 In 8(x + 2), identify the two factors.

ANSWER _____

4 Evaluate 5x + 12 when x = 4.

ANSWER _____

5 Evaluate (x + 10)/2 when x = 6.

ANSWER _____

6 In (x + 14)/5, identify the sum and the quotient.

ANSWER _____

APPLY IT Show your work

1 A streaming site charges $4 to rent each movie and a one-time $8 account fee. Write an expression for the total cost of x movies. Then find the cost for 5 movies.

WORK SPACE

ANSWER _____

2 A team buys x packs of trading cards. Each pack has 12 cards. The team splits all the cards equally among 4 players. Write an expression for the number of cards each player gets. Then evaluate it when x = 6.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A school club sells buttons for $8 each and charges a $4 shipping fee per order. You have $52. Write an expression for the cost of x buttons. Identify its two terms, then find the greatest whole number of buttons you can buy. Explain how you know.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Detective

GRADE 6 · 6.EE.2b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	In 4x + 9, identify the coefficient and constant.	**Coefficient: 4; constant: 9.**
2	In 18 - 6x, identify the difference and the product.	**Difference: 18 - 6x; product: 6x.**
3	In 8(x + 2), identify the two factors.	**8 and (x + 2).**
4	Evaluate 5x + 12 when x = 4.	**32**
5	Evaluate (x + 10)/2 when x = 6.	**8**
6	In (x + 14)/5, identify the sum and the quotient.	**Sum: x + 14; quotient: (x + 14)/5.**

PART 2 · APPLY IT

1. **4x + 8; $28** Multiply the number of movies by $4, then add the $8 fee. For 5 movies, 4(5) + 8 = 28.
2. **12x/4; 18 cards per player** The team has 12x cards, so each player gets 12x/4. When x = 6, 12(6)/4 = 18.

CHALLENGE

The expression is 8x + 4, and its terms are 8x and 4. You can buy 6 buttons because 8(6) + 4 = 52, while 7 buttons would cost $60.

Accept equivalent expressions in the word problems if they represent the stated costs or card count. In problem 2, the difference is the whole expression, and the product is 6x.