LESSON MAKER PRO

Expression Detectives

Find the important parts of each expression.

GRADE 6 · 6.EE.A.2b

CCSS.Math.Content.6.EE.A.2b "Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example..."

NAME _____ DATE _____

PARTS WORK TOGETHER

A sum has terms, a product has factors, and a quotient has a numerator and denominator. A coefficient is the numerical factor of a variable term. A group in parentheses can be treated as one entity, even when the group is also a sum with its own terms.

WORKED EXAMPLE

Describe 12(4 + 9) using expression vocabulary.

1. The whole expression is a product.
2. Its two factors are 12 and (4 + 9).
3. Treat (4 + 9) as one factor, or one entity.
4. Inside that entity is a sum with terms 4 and 9.

Answer: 12(4 + 9) is a product with factors 12 and (4 + 9). The factor (4 + 9) is also a sum with terms 4 and 9.

PRACTICE 6 problems

1 Look at 7x + 11. Identify the coefficient and the variable term.

ANSWER _____

2 Is 6(y + 8) a sum, product, or quotient? Name its two factors.

ANSWER _____

3 List all three terms in 11a + 15 + 5b.

ANSWER _____

4 For (m + 16)/8, name the numerator and the denominator.

ANSWER _____

5 In (a + 6)(b + 7), list the two factors. What can the first factor be viewed as?

ANSWER _____

6 In 18r + (q + 1), list the terms of the entire expression. Then tell what (q + 1) is when viewed by itself.

ANSWER _____

APPLY IT Show your work

1 A gaming club earns 5 points for each win and gets a 13-point bonus. Its score is shown by 5w + 13. Name the terms, identify the coefficient, and name the factors in the product term.

WORK SPACE

ANSWER _____

2 A music app charges a $7 monthly fee plus $2 for each song download. The cost is shown by 7 + 2d. Name the two terms in the sum, then identify the product and its factors.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Describe 3(2x + 5) + 8 in two layers. First list the terms in the outer sum. Then describe the first term as a product and describe its grouped factor.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Detectives

GRADE 6 · 6.EE.A.2b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Look at 7x + 11. Identify the coefficient and the variable term.	**Coefficient: 7; variable term: 7x.**
2	Is 6(y + 8) a sum, product, or quotient? Name its two factors.	**It is a product. Its factors are 6 and (y + 8).**
3	List all three terms in 11a + 15 + 5b.	**The terms are 11a, 15, and 5b.**
4	For (m + 16)/8, name the numerator and the denominator.	**Numerator: (m + 16); denominator: 8.**
5	In (a + 6)(b + 7), list the two factors. What can the first factor be viewed as?	**The factors are (a + 6) and (b + 7). The first factor is a sum with terms a and 6.**
6	In 18r + (q + 1), list the terms of the entire expression. Then tell what (q + 1) is when viewed by itself.	**The terms are 18r and (q + 1). The expression (q + 1) is a sum with terms q and 1.**

PART 2 · APPLY IT

1. **Terms: 5w and 13; coefficient: 5; factors in 5w: 5 and w.** The plus sign separates the two terms. The term 5w is a product, so 5 is the coefficient and 5 and w are its factors.
2. **Terms: 7 and 2d; product: 2d; factors: 2 and d.** The whole expression is a sum with terms 7 and 2d. The variable term 2d is a product of 2 and d.

CHALLENGE

The outer sum has terms 3(2x + 5) and 8. The first term is a product with factors 3 and (2x + 5), and (2x + 5) is a sum with terms 2x and 5.

Accept terms and factors in either order. Accept equivalent wording such as grouped expression, parenthetical expression, or single entity for an expression in parentheses.