LESSON MAKER PRO

Spot the Pieces

Read expressions by their terms, factors, and coefficients.

HIGH SCHOOL · HSA-SSE.A.1a

CCSS.Math.Content.HSA-SSE.A.1a "Interpret parts of an expression, such as terms, factors, and coefficients."

NAME _____ DATE _____

EXPRESSION PARTS

Terms are parts of an expression separated by addition or subtraction signs. Factors are quantities multiplied within one term. A coefficient is the numerical factor of a variable term, including its sign.

WORKED EXAMPLE

In $7p^2 - 4pq + 9$, identify the terms, the factors of each variable term, and the coefficients.

1. Split at the addition and subtraction signs: $7p^2$, $-4pq$, and 9.
2. In $7p^2$, the factors are 7, p, and p, so the coefficient is 7.
3. In $-4pq$, the factors are -4, p, and q, so the coefficient is -4. The term 9 is constant.

Answer: Terms: $7p^2$, $-4pq$, 9. Factors: 7, p, p and -4, p, q. Coefficients: 7 and -4.

PRACTICE 6 problems

1 Name the terms in $3x - 8$. What is the coefficient of x?

ANSWER _____

2 In $-5a^3b + 6ab - c$, list the coefficient of each variable term.

ANSWER _____

3 For $10mn^3$, name the coefficient and the factors.

ANSWER _____

4 In $-3r(s + 1) + 5$, identify the factors and coefficient of the first term.

ANSWER _____

5 In $1/3q^3 - 5q + 8$, identify the coefficients of q^3 and q, then identify the constant term.

ANSWER _____

6 List the terms in $u^3 + uv - v$ and give each term's coefficient.

ANSWER _____

APPLY IT Show your work

1 The drama club sells t tickets for $15 each and pays a $60 permit fee. Its profit is P = 15t - 60. Explain what each term represents and what the coefficient 15 tells you.

WORK SPACE

ANSWER _____

2 A phone plan charges an $18 monthly base fee plus $3 for each extra gigabyte of data. The monthly cost is C = 3g + 18, where g is the number of extra gigabytes. Identify the factors of the variable term, the coefficient, and the constant term.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Without expanding, analyze 5m(m + 3) - 6m. Identify the terms, the factors of each term, and the coefficients. Explain why m + 3 is not a separate term of the whole expression.

WORK SPACE AND ANSWER

ANSWER KEY

Spot the Pieces

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Name the terms in 3x - 8. What is the coefficient of x?	**Terms: 3x, -8. Coefficient of x: 3.**
2	In $-5a^3b + 6ab - c$, list the coefficient of each variable term.	**Coefficients: -5 for a^3b, 6 for ab, and -1 for c.**
3	For $10mn^3$, name the coefficient and the factors.	**Coefficient: 10. Factors: 10, m, n^3.**
4	In $-3r(s + 1) + 5$, identify the factors and coefficient of the first term.	**Factors of the first term: -3, r, (s + 1). Coefficient: -3.**
5	In $1/3q^3 - 5q + 8$, identify the coefficients of q^3 and q, then identify the constant term.	**Coefficient of q^3: 1/3. Coefficient of q: -5. Constant term: 8.**
6	List the terms in $u^3 + uv - v$ and give each term's coefficient.	**Terms: u^3, uv, -v. Coefficients: 1, 1, -1.**

PART 2 · APPLY IT

1. **The term 15t is the money collected from ticket sales. The term -60 represents the permit fee, and 15 means each ticket brings in $15.** The variable term multiplies the number of tickets by the price per ticket. The constant is the fixed fee subtracted from revenue.
2. **The factors of 3g are 3 and g. The coefficient is 3, which means $3 per extra gigabyte, and the constant term is 18, the monthly base fee.** Read 3g as a product of the per-gigabyte charge and the number of extra gigabytes. The value 18 does not depend on g.

CHALLENGE

The terms are 5m(m + 3) and -6m. The factors are 5, m, (m + 3) for the first term and -6, m for the second term. The coefficients are 5 and -6. The expression m + 3 is a factor inside the first term, not a separate term of the whole expression, because it is not separated from the first term by an outer addition or subtraction sign.

Accept equivalent factor lists, such as n, n, n instead of n^3. Accept coefficients of 1 and -1 when students write them explicitly, and treat constants as terms rather than variable coefficients.