

Terms, Factors, and Coefficients

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

The parts of an expression have names. A **term** is a single number or variable, or numbers and variables multiplied together — terms are separated by + or – signs. In $5x + 3$, the terms are $5x$ and 3 . The **coefficient** is the number multiplied by a variable, so in $5x$ the coefficient is 5 . The number 3 on its own is called a **constant**. **Factors** are the things multiplied together to make a term: the factors of $5x$ are 5 and x . Knowing these names helps you describe and work with expressions clearly.

◇ **Example:** In the expression $7y + 4$, name the terms, the coefficient, and the constant.

⇒ Let's look at where the + sign splits the expression. That gives us two **terms**: $7y$ and 4 . Now look at $7y$ — it is a number multiplied by a variable, and that number, 7 , is the **coefficient**. The term 4 has no variable attached, so it is the **constant**. Naming the parts is just careful reading once you know what to look for.

Answer: terms: $7y$ and 4 ; coefficient: 7 ; constant: 4

PRACTICE

Identify the requested part of each expression.

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|-------------------------------------|-------|--|-------|
| 1. Coefficient of $8x$ | _____ | 11. Number of terms in 10 | _____ |
| 2. Coefficient of $3m$ | _____ | 12. Coefficient of $2.5w$ | _____ |
| 3. Coefficient of y | _____ | 13. Number of terms in $x + y + z + 4$ | _____ |
| 4. Number of terms in $4x + 9$ | _____ | 14. Constant in $3a + 6b + 11$ | _____ |
| 5. Number of terms in $6a + 2b - 5$ | _____ | 15. Coefficient of $\frac{1}{2}n$ | _____ |
| 6. Constant in $7n + 12$ | _____ | 16. Variable term in $4 + 7g$ | _____ |
| 7. Constant in $9 + 5k$ | _____ | 17. Number of terms in $8m - 3n$ | _____ |
| 8. Coefficient of $15p$ | _____ | 18. Coefficient of $100x$ | _____ |
| 9. Factors of $6x$ | _____ | 19. Factors of $12ab$ | _____ |
| 10. Factors of $9t$ | _____ | 20. Constant in $5x + 2y + 8 - 3$ | _____ |

◆ Word Problems

21. A school store sells pencils for 2 dollars each. The expression $2p + 5$ gives the total cost, where 5 is a membership fee. What is the coefficient of p , and what does it represent? _____
22. The expression $3w + 4w$ describes a project's total hours. How many terms does it have, and what are the coefficients? _____
23. A recipe expression is written as $8c + 3$, where c is the number of cups. Name the constant and explain what it could mean. _____
24. In the expression $6h + 9k - 2$, how many terms are there, and which term is the constant? _____



Answer Keys

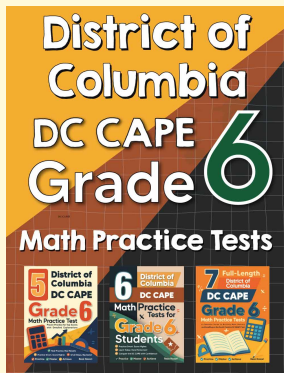
- | | |
|--|--|
| <p>1. <input type="text" value="8"/></p> <p>2. <input type="text" value="3"/></p> <p>3. <input type="text" value="1"/></p> <p>4. <input type="text" value="2"/></p> <p>5. <input type="text" value="3"/></p> <p>6. <input type="text" value="12"/></p> <p>7. <input type="text" value="9"/></p> <p>8. <input type="text" value="15"/></p> <p>9. <input type="text" value="6 and x"/></p> <p>10. <input type="text" value="9 and t"/></p> <p>11. <input type="text" value="1"/></p> <p>12. <input type="text" value="2.5"/></p> | <p>13. <input type="text" value="4"/></p> <p>14. <input type="text" value="11"/></p> <p>15. <input type="text" value="1/2"/></p> <p>16. <input type="text" value="7g"/></p> <p>17. <input type="text" value="2"/></p> <p>18. <input type="text" value="100"/></p> <p>19. <input type="text" value="12, a, and b"/></p> <p>20. <input type="text" value="5"/></p> <p>21. <input type="text" value="Coefficient is 2; the price per pencil"/></p> <p>22. <input type="text" value="2 terms; coefficients 3 and 4"/></p> <p>23. <input type="text" value="Constant is 3"/></p> <p>24. <input type="text" value="3 terms; constant is 2"/></p> |
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Step-by-Step Explanations

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| <p>1. The coefficient is the number multiplied by the variable, which is 8.</p> <p>2. In $3m$, the number 3 multiplies the variable, so the coefficient is 3.</p> <p>3. When a variable stands alone, its coefficient is 1, since $y = 1y$.</p> <p>4. The $+$ sign separates two terms: $4x$ and 9.</p> <p>5. The terms are $6a$, $2b$, and 5 — that is 3 terms.</p> <p>6. The constant is the term with no variable, which is 12.</p> <p>7. The number 9 has no variable attached, so it is the constant.</p> <p>8. The number multiplying p is 15, so that is the coefficient.</p> <p>9. The factors of $6x$ are the things multiplied together: 6 and x.</p> <p>10. $9t$ is 9 multiplied by t, so its factors are 9 and t.</p> <p>11. A single number is one term all by itself.</p> <p>12. A coefficient can be a decimal: here it is 2.5.</p> <p>13. Each piece separated by $+$ is a term: x, y, z, and 4.</p> <p>14. The only term without a variable is 11, the constant.</p> | <p>15. A coefficient can be a fraction — here it is $\frac{1}{2}$.</p> <p>16. The term $7g$ contains a variable, while 4 is just a constant.</p> <p>17. The $-$ sign separates two terms: $8m$ and $3n$.</p> <p>18. The number multiplying x is 100.</p> <p>19. $12ab$ is 12, a, and b all multiplied together.</p> <p>20. The constants 8 and 3 combine: $8 - 3 = 5$, so the constant is 5.</p> <p>21. The coefficient of p is 2, and it tells us each pencil costs 2 dollars. The 5 is the constant membership fee.</p> <p>22. The $+$ sign separates two terms, $3w$ and $4w$. Their coefficients are 3 and 4.</p> <p>23. The constant is 3 — the term with no variable. It could be a fixed amount, like 3 extra cups added no matter what.</p> <p>24. The terms are $6h$, $9k$, and 2, so there are 3 terms. The constant is 2, since it has no variable.</p> |
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