

# 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.

- |                                     |       |  |       |
|-------------------------------------|-------|--|-------|
| 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

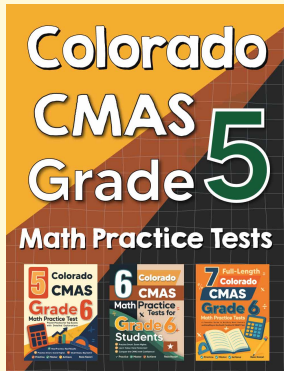
- |  |  |
|--|--|
| <p>1. <input type="text" value="8"/></p> <p>2. <input type="text" value="3"/></p> <p>3. <input type="text" value="1"/></p> <p>4. <input type="text" value="2"/></p> <p>5. <input type="text" value="3"/></p> <p>6. <input type="text" value="12"/></p> <p>7. <input type="text" value="9"/></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> |
|--|--|

### Step-by-Step Explanations

- |   |  |
|---|--|
| <p>1. The coefficient is the number multiplied by the variable, which is 8.</p> <p>2. In <math>3m</math>, the number 3 multiplies the variable, so the coefficient is 3.</p> <p>3. When a variable stands alone, its coefficient is 1, since <math>y = 1y</math>.</p> <p>4. The <math>+</math> sign separates two terms: <math>4x</math> and 9.</p> <p>5. The terms are <math>6a</math>, <math>2b</math>, 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 <math>p</math> is 15, so that is the coefficient.</p> <p>9. The factors of <math>6x</math> are the things multiplied together: 6 and <math>x</math>.</p> <p>10. <math>9t</math> is 9 multiplied by <math>t</math>, so its factors are 9 and <math>t</math>.</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 <math>+</math> is a term: <math>x</math>, <math>y</math>, <math>z</math>, 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 <math>\frac{1}{2}</math>.</p> <p>16. The term <math>7g</math> contains a variable, while 4 is just a constant.</p> <p>17. The <math>-</math> sign separates two terms: <math>8m</math> and <math>3n</math>.</p> <p>18. The number multiplying <math>x</math> is 100.</p> <p>19. <math>12ab</math> is 12, <math>a</math>, and <math>b</math> all multiplied together.</p> <p>20. The constants 8 and 3 combine: <math>8 - 3 = 5</math>, so the constant is 5.</p> <p>21. The coefficient of <math>p</math> is 2, and it tells us each pencil costs 2 dollars. The 5 is the constant membership fee.</p> <p>22. The <math>+</math> sign separates two terms, <math>3w</math> and <math>4w</math>. 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 <math>6h</math>, <math>9k</math>, and 2, so there are 3 terms. The constant is 2, since it has no variable.</p> |
|---|--|



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