Name _____ Date _____

Writing and Evaluating Expressions with Variables: From Words to Algebra

Directions: A variable is a letter that stands for a number. A number written right next to a variable means multiply, so 5n means 5 times n. To evaluate an expression, replace each variable with its value and then follow the order of operations.

1. Which expression means 7 less than a number n?

A. $n - 7$ B. $n \div 7$ C. $7n$ D. $7 - n$

2. Tickets to a school play cost $9 each. Which expression gives the cost, in dollars, of t tickets?

A. $t - 9$ B. $9 + t$ C. $t \div 9$ D. $9t$

3. Evaluate $4k + 3$ when $k = 5$.

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4. Look at the expression $6n + 15$. Which statement about it is true?

A. The expression is a product of 6n and 15.

B. The number 15 is the coefficient of n.

C. The expression has three terms: 6, n and 15.

D. The number 6 is the coefficient of n.

5. Two students evaluate $3n^2$ when $n = 4$.

- Paloma multiplies first: $3 \times 4 = 12$. Then she squares: $12^2 = 144$.
- Emeka squares first: $4^2 = 16$. Then he multiplies: $3 \times 16 = 48$.

Whose value is correct, and why?

A. Emeka's, because the exponent belongs only to n, so 4 is squared before it is multiplied by 3.

B. Both, because 144 and 48 are equal.

C. Neither, because $3n^2$ means $3 \times 4 \times 2$, which is 24.

D. Paloma's, because operations are always done from left to right.

6. A science class uses the formula $d = 16t^2$ to estimate how many feet a dropped object falls in t seconds. What value does the formula give for d when $t = 5$?

_____ feet

7. Which words describe the expression $5(n + 2)$?

A. a quotient of 5 and $(n + 2)$

B. a product of two factors, 5 and $(n + 2)$

C. a sum of two terms, 5 and $(n + 2)$

D. a product of three factors, 5, n and 2

8. Evaluate $30 - 12 \div k$ when $k = 4$.

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9. Which expressions mean the product of 4 and the sum of n and 6? Select the two that match the words.

☐ A. $4 \times n \times 6$ ☐ B. $4(n + 6)$ ☐ C. $4n + 6$

☐ D. $4 + n + 6$ ☐ E. $(n + 6) \times 4$

10. A gym charges a $25 sign-up fee plus $10 for each month. Which expression gives the total cost, in dollars, for m months?

A. $25 + 10m$ B. $25m + 10$ C. $35m$ D. $25 + 10 + m$