# **Math 6 B Unit Test Guide**

## Expressions Unit Test

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| **Item** | **Lesson Coverage** | **Objective** | **Lesson Page** | **Assessment Item** |
| 1 | Lesson 2: Numerical Expressions | In this section, you will write numerical expressions involving whole-number exponents. | p. 1-6 | A worker in a factory earns $10 an hour. The worker works 10 hours a day for 10 days straight before a vacation. How much money did the worker earn before going on vacation?Answer: $\$10^{3}$ |
| 2 | Lesson 2: Numerical Expressions | In this section, you will evaluate numerical expressions involving whole-number exponents. | p. 7-12 | 3 raised to what power is equal to 81?Answer: 4 |
| 3 | Lesson 3: Variable Expressions | In this section, you will use a variable to represent an unknown number that would lead to solving a problem.  | p. 1-6 | What are the variables in the equation $y=3x-4$?Answer: *x* and *y*  |
| 4 | Lesson 3: Variable Expressions | In this section, you will write an expression to represent a real-world problem using variables to represent numbers. | p. 7-11 | A sign is being painted that includes 3 small squares with a side length of $s$ and 2 large ones with a side length of $S$. Write an expression to find the total area of the sign that needs to be painted.Answer: $2S^{2}+3s^{2}$ |
| 5 | Lesson 4: Evaluate Expressions | In this section, you will evaluate expressions at specific values of their variables. | p. 1-8 | Evaluate the expression at specific values of their variables.Evaluate $a^{5}-bc+4a÷c$ when *a* = 2, *b* = 3, and *c* = 8.Answer: 9 |
| 6 | Lesson 4: Evaluate Expressions | In this section, you will evaluate expressions that arise from formulas used in real-world problems at specific values of their variables. | p. 9-15 | The expression $25c=48a$ represents the total cost for a group of children and adults to attend the amusement park. The variable *c* represents the number of children attending. The variable *a* represents the number of adults attending. What is the total cost for 12 children and 4 adults?Answer: The total cost is $492. |
| 7 | Lesson 5: Translate Expressions | In this section, you will translate words into algebraic expressions. | p. 1-6 | A truck rental costs $2 per miles, *m*, driven plus a $24 rental fee. Translate the words into an algebraic expression.Answer: 2*m* + 24 |
| 8 | Lesson 5: Translate Expressions | In this section, you will translate algebraic expressions into words. | p. 7-13 | The expression 5*p* is given. What is the expression translated into words?Answer: the product of 5 and a number *p* |
| 9 | Lesson 6: Parts of an Expression | In this section, you will identify different parts of an expression using mathematical vocabulary. | p. 1-6 | In the equation 9*c* = 18, the 9 is called aAnswer: coefficient |
| 10 | Lesson 6: Parts of an Expression | In this section, you will use mathematical vocabulary to describe different parts of equations and expressions. | p. 7-11 | What is the coefficient in the expression $9+8b-56$?Answer: 8 |
| 11 | Lesson 7: Use the Order of Operations | In this section, you will use the order of operations to simplify numerical expressions. | All | Simplify: $12-4÷\frac{4}{3}+1$.Answer: 10 |
| 12 | Lesson 8: Properties of Operations | In this section, you will identify the Associative and Commutative Properties of Addition and the Associative, Commutative, and Distributive Properties of Multiplication. | All | Which of the following shows the correct pairing of a property of operations and its example?Answer: $2a+3b=3b+2a$; Commutative Property |
| 13 | Lesson 9: Equivalent Expressions | In this section, you will use the properties of operations to identify when two expressions are equivalent. | p. 1-8 | Which expression is equivalent to $2\left(x+3\right)+4\left(x+1\right)$?Answer: $6x+10$ |
| 14 | Lesson 9: Equivalent Expressions | In this section, you will apply the properties of operations to a given expression to generate an equivalent expression. | p. 9-13 | Apply the Associative and Commutative Properties to generate an expression equivalent to $2\left(a+5\right)+4\left(2a+3\right)-10$.Answer: $10a+12$ |
| 15 | Lesson 2: Numerical Expressions | In this section, you will write numerical expressions involving whole-number exponents. | p. 1-6 | A class is given this question on a test about exponents: A squirrel collects 12 nuts an hour for 12 hours on 12 days. Write an expression with and without exponents to find how many nuts the squirrel collected.Two students provided these answers.Which student is correct? Explain what the incorrect student did incorrectly.Answer: Student B is correct. Student A wrote the exponential expression correctly, but they did not write the expression without the exponents correctly. The exponent of 3 tells how many times 12 should be multiplied by itself: $12∙12∙12$. |