# **Whole Numbers Comprehension Check**

For questions 1-3 complete the table using what you know about standard form, expanded form, and word form.

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| --- | --- | --- | --- |
| **Question #** | **Standard Form** | **Expanded Form** | **Word Form** |
|  | 3,972 |  |  |
|  |  | 70,000 + 10,000 + 90 + 4 |  |
|  |  |  | Three hundred seventeen thousand, eight hundred thirty-six |

1. Describe the strategy you would use to compare the numbers 34,901 and 5,491. Which is greater?
2. What is rounding? Describe how you would round 2,396 to the nearest hundreds place.
3. Describe and compare the vocabulary terms factor and multiple. Use examples to support your answer.
4. List all the common factors of 18 and 60. What is their greatest common factor?
5. Describe how to find the least common multiple of 7 and 5.
6. What does it mean if a number is divisible by something?
7. What is a property in math? Describe the three major addition and multiplication properties: identity, commutative, and associative.

# **Whole Numbers Comprehension Check Answer Key**

For questions 1-3 complete the table using what you know about standard form, expanded form, and word form.

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| --- | --- | --- | --- |
| **Question #** | **Standard Form** | **Expanded Form** | **Word Form** |
|  | 3,972 | 3,000 + 900 + 70 + 2 | Three thousand, nine hundred seventy-two |
|  | 71,094 | 70,000 + 10,000 + 90 + 4 | Seventy-one thousand, ninety-four |
|  | 317,836 | 300,000 + 10,000 + 7,000 + 800 + 30 + 6 | Three hundred seventeen thousand, eight hundred thirty-six |

1. Describe the strategy you would use to compare the numbers 34,901 and 5,491. Which is greater?
   1. Students’ strategies may vary but they should rely on place value understanding to compare these numbers. Students should first line up the numbers based on their place value. Students should identify the number with the greatest place value as the greatest number, even if the digit in that place is less than the value of the highest digit in the other number. For example, even though 3 < 5, we can say that 34,901 is greater than 5,491 because 34,901 contains digits in a higher place and therefore has a higher value.
2. What is rounding? Describe how you would round 2,396 to the nearest hundreds place.
   1. Rounding is a skill mathematicians use in many areas of math. It involves replacing a number with a close, but simpler value. Rounding can be useful for mathematicians when they are estimating or when they are trying to solve problems mentally.
   2. In order to round 2,396 to the hundreds place, students should first identify the hundreds place and then look to the digit on the right. In this example, the hundreds place contains a 3 and the digit to the right is a 9. We must round up because 9 > 5, so the 3 rounds up to a 4. The remainder of the digits left of the rounding place stay the same. We can say 2,396 rounds to 2,400. We can use reasoning to check our answer because we know 396 is close to 400 and would therefore make sense to round the way we did.
3. Describe and compare the vocabulary terms factor and multiple. Use examples to support your answer.
   1. A factor of a whole number can be multiplied by another number to make that whole number. Whole numbers are divisible by their factors. In order to find the factors of a number, it can be helpful to think about pairs of digits that multiply together to get that number as a product. For example, the factors of 28 include 1 and 28, 2 and 14, and 4 and 7. Numbers that only have one pair of factors, one and themselves, are called prime numbers.
   2. A multiple of a whole number is one of its products with another factor. It can be helpful to think about multiples as the numbers we produce when skip counting by a certain number. For example, the multiples of 4 include 4, 8, 12, 16, 24, 28, 32, and so on. It is important to note that multiples are infinite and can be listed forever whereas factors are finite as there are only a certain number of digits that, when multiplied, produce a given amount.
4. List all the common factors of 18 and 60. What is their greatest common factor?
   1. The factors of 18 are 1, 18, 2, 9, 3, and 6. The factors of 60 are 1, 60, 2, 30, 3, 20, 4, 14, 5, 12, 6, and 10. The common factors of 18 and 60 are 1, 2, 3, and 6, so the greatest common factor of 18 and 60 is 6.
5. Describe how to find the least common multiple of 7 and 5.
   1. In order to find the least common multiple of two numbers, first list a few multiples of each. Then look for similarities in the two lists, choosing the common multiple with the lowest value. For example, the first few multiples of 7 are 7, 14, 21, 28, 35, and 42, and the first few multiples of 5 are 5, 10, 15, 20, 25, 30, 35, and 40. Although we could continue listing multiples of these numbers, we have already found the list common multiple as 35.
6. What does it mean if a number is divisible by something?
   1. In order for a number to be divisible by another number, it must be able to be divided evenly by that number. Another way to think about divisibility is by thinking about the factors of a whole number. A whole number is divisible by any of its factors. For example, the number 4 is divisible by 1, 2, and 4, but not 3 because dividing 4 into 3 groups would produce a non-whole number answer.
7. What is a property in math? Describe the three major addition and multiplication properties: identity, commutative, and associative.
   1. In math, a property refers to a characteristic that applies to a given set of numbers or to an operation. For example, both addition and multiplication have an identity property, a commutative property, and an associative property. In addition, the identity property states that adding zero to another number always equals that other number, the commutative property states that changing the order of the addends results in the same sum, and the associative property states that changing the grouping of the addends results in the same sum. In multiplication, the identity property states that multiplying any number by zero results in a product of 0, the commutative property states that changing the order of the factors results in the same product, and the associative property states that changing the grouping of the factors keeps the same product.