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What is a multiple in maths

The basic definition of multiple is manifold. In math, the meaning of a multiple is the product result of one number multiplied by another number. Here, 56 is a multiple of the integer 7. Here is another example of multiples: Fun Facts0 is a multiple of every number as the product of 0 multiplied by any number is 0. Let’s find multiples of two and do a sing-along. Two, four, six, eight and ten, the list is so long. Stop right there! Take note when I hit the gong!Multiples become bigger and bigger like King Kong! Instead of handing out math worksheets on multiples to your children, play the number plate game with them while driving them to school or for classes. Ask them to find the multiples of the first two or the last two digits of the number plate of the car ahead. Ask them to be quick in answering. Common multiples, Factor More Worksheets In mathematics, multiples is one of the important concepts which is used in many real life applications. As we know, the multiplication tables are the basis for finding the multiples of given numbers. In this article, you will learn what is a multiple in maths, how to find the multiples of a given number and examples of multiples in detail. Table of Contents: Multiple of a Number Poperties How to Find Multiple of 2 Multiple of 3 Multiple of 4 Multiple of 5 Multiple of 6 Multiple of 8 Multiple of 10 What is a Multiple of a Number? A multiple of a number is a number that is the product of a given number and some other natural number. For example, when we multiply 7 by 3, we get 21, i.e. 7 × 3 = 21. Here, 21 is the multiple of 7. Also, 7 and 3 are called the factors of 21. Read more: Factors and Multiples Addition Multiplication Division Properties of Multiples of a Number Some of the important properties of multiples of a number are listed below. Every multiple of a number is greater than or equal to that number. For example, 5, 10, 15, 20,.... are the multiples of 5. Here, we can observe that each of these multiples is greater than or equal to 5. The number of multiples of a given number is infinite. As we know, 9, 18, 27, 36, 45, 54,.... are the multiples of 9. However, this list of multiples is endless since we can multiply infinite integers to the given number. Every number is a multiple of itself. For example, 7 is a multiple of 7 since the multiples of 7 include 7, 14, 21, 28, etc. If Q is the multiple of P, then Q is exactly divisible by P. 32/8 = 4 such that 32 is a multiple of 8. The above property is used to verify the multiples of a number. How to Find the Multiple of a Number If two values p and q are there, we say that q is a multiple of p if q = np for some integer n. Thus, multiples of a number can be obtained by multiplying the given number with some integer but not a fraction. Also, we can find the multiples for a given number using repeated addition of the number as many times as required. Some of the examples are shown below such as multiples of 2, 3, 4, 5, and so on. What is a Multiple of 2 Multiple of 2 is the number obtained by multiplying 2 with integers such as 1, 2, 3, and so on. In other ways, we can find by repeatedly adding 2. Let’s have a look at the first 10 multiples of 2 in both of these methods. Multiples of 2:- Using multiplication Using repeated addition 2 × 1 = 2 2 × 2 = 4 2 + 2 = 4 2 × 3 = 6 2 + 2 + 2 = 6 2 × 4 = 8 2 + 2 + 2 + 2 = 8 2 × 5 = 10 2 + 2 + 2 + 2 + 2 = 10 2 × 6 = 12 2 + 2 + 2 + 2 + 2 + 2 = 12 2 × 7 = 14 2 + 2 + 2 + 2 + 2 + 2 + 2 = 14 2 × 8 = 16 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16 2 × 9 = 18 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 18 2 × 10 = 20 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20 What is a Multiple of 3 Multiple of 3 is the number obtained by multiplying 3 with integers such as 1, 2, 3, and so on. In other ways, we can find by repeatedly adding 3. Go through the table given below to get the first 10 multiples of 3 in both of these methods. Multiples of 3:- Using multiplication Using repeated addition 3 × 1 = 3 3 × 2 = 6 3 + 3 = 6 3 × 3 = 9 3 + 3 + 3 = 9 3 × 4 = 12 3 + 3 + 3 + 3 = 12 3 × 5 = 15 3 + 3 + 3 + 3 + 3 = 15 3 × 6 = 18 3 + 3 + 3 + 3 + 3 + 3 = 18 3 × 7 = 21 3 + 3 + 3 + 3 + 3 + 3 + 3 = 21 3 × 8 = 24 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24 3 × 9 = 27 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 27 3 × 10 = 30 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 30 What is a Multiple of 4 The number obtained by multiplying 4 with integers such as 1, 2, 3, and so on is called the multiple of 4. In other ways, we can find by repeatedly adding 4. The below table contains the first 10 multiples of 4 in both of these methods. Multiples of 4:- Using multiplication Using repeated addition 4 × 1 = 4 4 × 2 = 8 4 + 4 = 8 4 × 3 = 12 4 + 4 + 4 = 12 4 × 4 = 16 4 + 4 + 4 + 4 = 16 4 × 5 = 20 4 + 4 + 4 + 4 + 4 = 20 4 × 6 = 24 4 + 4 + 4 + 4 + 4 + 4 = 24 4 × 7 = 28 4 + 4 + 4 + 4 + 4 + 4 + 4 = 28 4 × 8 = 32 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 32 4 × 9 = 36 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 36 4 × 10 = 40 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 40 What is a Multiple of 5 Multiple of 5 is the number obtained by multiplying 5 with numbers such as 1, 2, 3, and so on. In other ways, we can find by repeatedly adding 5. Go through the table given below to get the first 10 multiples of 5 in both of these methods. Multiples of 5:- Using multiplication Using repeated addition 5 × 1 = 5 5 × 2 = 10 5 + 5 = 10 5 × 3 = 15 5 + 5 + 5 = 15 5 × 4 = 20 5 + 5 + 5 + 5 = 20 5 × 5 = 25 5 + 5 + 5 + 5 + 5 = 25 5 × 6 = 30 5 + 5 + 5 + 5 + 5 + 5 = 30 5 × 7 = 35 5 + 5 + 5 + 5 + 5 + 5 + 5 = 35 5 × 8 = 40 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40 5 × 9 = 45 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 45 5 × 10 = 50 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 50 What is a Multiple of 6 Multiple of 6 is the product obtained after multiplying 7 with some integers like 1, 2, 3, and so on. The below table shows the first 10 multiples of 6 using multiplication and repeated addition. Multiples of 6:- Using multiplication Using repeated addition 6 × 1 = 6 6 × 2 = 12 6 + 6 = 12 6 × 3 = 18 6 + 6 + 6 = 18 6 × 4 = 24 6 + 6 + 6 + 6 = 24 6 × 5 = 30 6 + 6 + 6 + 6 + 6 = 30 6 × 6 = 36 6 + 6 + 6 + 6 + 6 + 6 = 36 6 × 7 = 42 6 + 6 + 6 + 6 + 6 + 6 + 6 = 42 6 × 8 = 48 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 48 6 × 9 = 54 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 54 6 × 10 = 60 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 60 What are the Multiples of 8 The multiples of 8 are 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96,..... These can be expressed using multiplication of 8 by other numbers like 1, 2, 3, and so on and also using repeated addition. Multiples of 8:- Using multiplication Using repeated addition 8 × 1 = 8 8 × 2 = 16 8 + 8 = 16 8 × 3 = 24 8 + 8 + 8 = 24 8 × 4 = 32 8 + 8 + 8 + 8 = 32 8 × 5 = 40 8 + 8 + 8 + 8 + 8 = 40 8 × 6 = 48 8 + 8 + 8 + 8 + 8 + 8 = 48 8 × 7 = 56 8 + 8 + 8 + 8 + 8 + 8 + 8 = 56 8 × 8 = 64 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 64 8 × 9 = 72 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 72 8 × 10 = 80 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 80 What is a Multiple of 10 Finding the multiple of 10 is quite simple. Suppose, the fifth multiple of 10 can be obtained by getting the 5 times value of 10, i.e. 5 × 10 = 50. Similarly, the first 10 multiples of 10 can be expressed as: Multiples of 10:- Using multiplication Using repeated addition 10 × 1 = 10 10 × 2 = 20 10 + 10 = 20 10 × 3 = 30 10 + 10 + 10 = 30 10 × 4 = 40 10 + 10 + 10 + 10 = 40 10 × 5 = 50 10 + 10 + 10 + 10 + 10 = 50 10 × 6 = 60 10 + 10 + 10 + 10 + 10 + 10 = 60 10 × 7 = 70 10 + 10 + 10 + 10 + 10 + 10 + 10 = 70 10 × 8 = 80 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 80 10 × 9 = 90 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 90 10 × 10 = 100 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 = 100 A multiple is a product that we get when one number is multiplied by another number. For example, if we say 4 × 5 = 20, here 20 is a multiple of 4 and 5. The other multiples of 4 can be listed as 4, 8, 12, and so on. Learning about multiples helps us to explore many other concepts in math, so let us learn more about what are multiples, the definition of multiples, along with some multiple examples. What are Multiples? According to the definition of multiples in maths, multiples are numbers that we get when we multiply one whole number by another whole number. Or in simple terms, you get the multiples of a number when you multiply! Do you remember the multiplication tables? We will be using them to find multiples. Let us see how it helps us to understand the meaning of multiples while we list the first five (non zero) multiples of the number 6. The first five (non zero) multiples of 6 are 6, 12, 18, 24, and 30. We can see that the multiples of 6 are listed in the table of 6. Hence, we can conclude that: Multiple of a number = Number × Any integer (not a fraction). List of Multiples We can list the multiples of a number by multiplying the given number to an integer (negative or positive). Notably, a number may have an infinite number of multiples. Here is a list of the multiples of a few numbers. Number First Ten Multiples (Non Zero) 3 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 4 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 5 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 10 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 Properties of Multiples The properties of multiples tell us about them in detail. Here are some of the properties of multiples that tell us about the nature of multiples. 1) Every number is a multiple of itself. For example, the first non-zero multiple of 7 is 7 because 7 × 1 = 7. 2) The multiples of a number are infinite. We know that numbers are infinite. Therefore, the multiples of a number are infinite. For example, if we need to list the multiples of 3, we start with: 3, 6, 9, 12, 15, 18, ... and so on. However, will you be able to list all the multiples here? No, because they are infinite. 3) The multiple of a number is greater than or equal to the number itself (except for 0). For example, let us take the multiples of 5: 5, 10, 15, 20, 25, 30, ... and so on. We can see that: The 1st multiple of 5 is equal to 5 × 1 = 5. The 2nd multiple, the 3rd multiple, and the following multiples of 5 are all greater than 5 (10 > 5, 15 > 5, ...). Factors and Multiples Factors and multiples are related to each other. A factor is a number that divides another number completely without any remainder, while a multiple is a product that is obtained when one number is multiplied by another number. For example, in 3 × 4 = 12, 3 and 4 are the factors of 12, while 12 is a multiple of 3 and 4. Common Multiples A common multiple is a number that is a shared multiple for a given set of numbers. In other words, the multiples that are common to two or more numbers are termed as the common multiples of those numbers. For example, the multiples of 3 can be listed as 3, 6, 9, 12, 15, 18, 21, 24, 27, and so on. The multiples of 4 can be listed as 4, 8, 12, 16, 20, 24, 28, 32, 36, and so on. Now, if we identify the common multiples of 3 and 4 in these two lists, we get 12 and 24. Multiples of Numbers: Example 1: Four friends Ria, Joe, Sam, and Tom decided to pluck flowers from the garden in the order of the first four multiples of 7. Can you list the number of flowers that each of them plucked as a series of the first four multiples of 7 (excluding zero)? Solution: The first four multiples of 7 are (7 × 1) = 7, (7 × 2) = 14, (7 × 3) = 21, and (7 × 4) = 28. Hence, Ria plucked 7 flowers, Joe plucked 14 flowers, Sam plucked 21 flowers and Tom plucked 28 flowers. Example 2: Ann loves watering plants. Her teacher asked her to water the pots which were marked in the order of the multiples of 9. However, she missed a few pots. Can you help her identify the pots that she missed in the following list: 9, 18, __, 36, __, 54, 63, 72, __? Solution: Let us start counting the multiplication table of 9: 9 × 1 = 9, 9 × 2 = 18, 9 × 3 = 27, 9 × 4 = 36, 9 × 5 = 45, 9 × 6 = 54, 9 × 7 = 63, 9 × 8 = 72, 9 × 9 = 81. ∴ The missed pots are 27, 45, and 81. Example 3: List down the first five multiples of 12. Solution: The first five multiples of 12 can be found by multiplying 12 by the first five natural numbers. 12 × 1 = 12 12 × 2 = 24 12 × 3 = 36 12 × 4 = 48 12 × 5 = 60 ∴ The first five multiples of 12 are 12, 24, 36, 48, and 60.. Show Solution > go to slidego to slidego to slide Breakdown tough concepts through simple visuals. Math will no longer be a tough subject, especially when you understand the concepts through visualizations. Book a Free Trial Class FAQs on Multiples Multiples, in math, are numbers that we get when we multiply one whole number by another whole number. For example, in 7 × 5 = 35, 35 is the multiple of 7 and 5. How are Factors and Multiples Related? A factor is a number that divides another number completely without any remainder. A multiple is a product that is obtained when one number is multiplied by another number. For example, in 6 × 8 = 48, 6 and 8 are the factors of 48, while 48 is a multiple of 6 and 8. What are Common Multiples? Common multiples of any two numbers are the multiples that are common to both the given numbers. For example, the multiples of 3 can be listed as 3, 6, 9, 12, 15, 18, 21, 24, 27, 30. Similarly, the multiples of 5 can be listed as 5, 10, 15, 20, 25, 30. Now, if we identify the common multiples of 3 and 5 in these two lists, we get 15 and 30. Note that there are infinite common multiples of any set of numbers. Common multiples of two numbers can be found by finding the multiples of the LCM of those two numbers. How to Find Multiples of a Number? We get the multiples of a number when we multiply the given number by another number. In other words, a multiple is a product that we get when one number is multiplied by another number. For example, if we say 8 × 5 = 40, here 40 is a multiple of 8 and 5. The other multiples of 8 can be listed as 8 (8 ×1 = 8), 16 (8 × 2 = 16), 24 (8 × 3 = 24), and so on. How many Multiples does a Number Have? There is no limit to the multiples of a number. In other words, a number has an uncountable or infinite number of multiples. What are the Multiples of 5? The multiples of 5 can be found by the following method: 5 (5 × 1 = 5), 10 (5 × 2 = 10), 15 (5 × 3 = 15), and so on. Hence, they can be listed as: 5, 10, 15, 20, 25, and so on. What are the Multiples of 4? The multiples of 4 are 4, 8, 12, 16, 20, and so on. These can be calculated by the simple way of multiplication. 4 (4 ×1 = 4), 8 (4 × 2 = 8), 12 (4 × 3 = 12), and so on. What are the Multiples of 2? The multiples of 2 can be listed as 2, 4, 6, 8, 10, 12, and so on. Interestingly, this is also a list of all even numbers since all even numbers are multiples of 2. How do you Explain Multiples? Multiples are products that we get when we multiply one whole number by another whole number. For example, 2 × 3 = 6. Here 6 is the multiple of 3 and 2. The other multiples of 2 can be listed as 2, 4, 6, 8, 10, 12, and so on. What are the Multiples of 3? The multiples of 3 can be listed as 3, 6, 9, 12, 15, and so on. These multiples can be calculated by simply multiplying 3 with the counting numbers, like, 3 (3 ×1 = 3), 6 (3 × 2 = 6), 9 (3 × 3 = 9), and so on. ABCDEFGHIJKLMNOPQRSTUVWXYZ The result of multiplying a number by an integer (not by a fraction). Examples: • 12 is a multiple of 3, because 3 × 4 = 12 • −6 is a multiple of 3, because 3 × −2 = −6 • But 7 is NOT a multiple of 3