


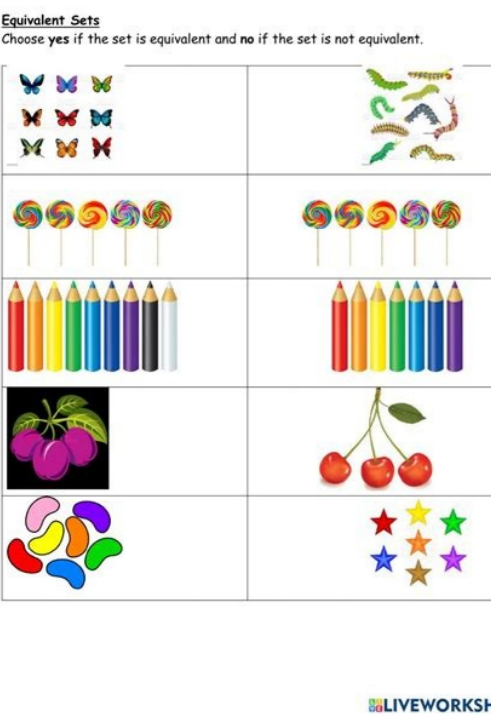
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# Equivalent vs equal sets

## Difference between equal and equivalent sets. Are equal sets always equivalent.

Equal sets are equivalent but equivalent sets need not be equal. Sets with the same elements are equal. If two sets are subsets of each other, then they are equal. Difference Between Equal And Equivalent Sets If all elements are equal in two or more sets, then they are equal. If the number of elements is the same in two or more sets, then are equivalent. Full Answer: Are equivalent sets necessarily equal sets? Yes, all equal sets are also equivalent sets. Equal sets have the exact same elements, so they must have the same number of elements. Therefore, equal sets must also be equivalent. No, not all equivalent sets are also equal sets. We saw that this is the case with the first two questions because we had sets that are equivalent, but not equal. What are equivalent sets definition and example? Equivalent sets. Equivalent sets are the sets with equal number of elements in them. Example : A={1,2,3} B={Monday,Tuesday,Wednesday} Are the two sets equal, equivalent, neither or both? Two sets are equivalent if they have the same number of elements. The elements do not need to be the same. Equivalent sets have one-to-one correspondence to each other. What does it mean for two sets to be "equal"? The equal set definition is that when two sets have the same elements. However, it does not matter which order the elements are arranged. The only thing that matters in an equal set is that the same elements are present in each set. The equivalent set definition states that in a simple set, there is an equal number of elements. What is an equivalent set? Equivalent set meaning states that two sets comprise an equal number of elements. It is not necessary to hold the same elements but include the same number of elements. A suitable example of equivalent sets is Set A: {M, N, O, P, Q, R} and Set B: {Red, Blue, Green, Yellow, Pink, Purple}. What does equivalent set mean in math? Equivalent sets meaning in Mathematics holds two definitions. Equivalent Sets Definition 1 - Let's say that two sets A and B have the same cardinality, then, there exists an objective function from set A to B. Equivalent Sets Definition 2 - Let's say that two sets A and B are stated to be equivalent only if they have the same cardinality, that is, ... How many elements are in a set of P and Q? Sets P and Q comprise completely different elements (Set P contains letters, and Set Q includes numbers of elements, which is five. This feature makes them equivalent. What does equal set mean? To understand Equal Set meaning, Equal Set is defined as two sets having the same elements. Two sets A and B can be equal only on the condition that each element of set A is also the element of set B. Also, if two sets happen to be the subsets of each other, then they are stated to be equal sets. (Image to be added soon) What does it mean when a set is one to one? This condition means that there should be one to one correspondence between the elements belonging to both the sets. In this context, the one to one condition implies that for each element on the set A, there exists an element in the set B, till both the set A and set B gets exhausted. Is an equal set an equivalent set? An equal set is an equivalent set, but an equivalent set necessarily cannot be an equal set. Do all null sets remain equivalent? All the null sets are said to be equivalent to each other. Not all the infinite sets remain equivalent to each other. For example, the equivalent set of all the real numbers and the equivalent set of the integers. If P and Q are stated to be two sets such that P is equal to Q, that is, (P = Q). What is the difference between equal and equivalent? The main difference between equal and equivalent is that the term equal refers to things that are similar in all aspects, where as the term equivalent refers to things that are similar in a particular aspect. How do you know if two things are equal? In general, two things are equal if they are similar in all respects. In the case of set theory, two sets are equal if they both contain the same elements. The order in which they are listed in a set does not matter. For instance, suppose, and, then, the set is equal to the set . What is transitivity in set theory? Transitivity: If and , then, in set theory, two sets are equivalent if they have the same number of elements. The elements themselves do not need to be the same, either, only the number of elements need to be the same. For instance, suppose, and, Is the set equal to the set? the set is equal to the set . Is 2 and 7 equivalent?



For instance, numbers 2 and 7 are equivalent in the sense that they are both prime numbers. However, if the condition we are interested in is finding out whether numbers are even, then in this sense 2 and 7 are not equivalent. We use the symbols or to indicate that and are equivalent. What is equal and equivalent? Equal and equivalent are terms or words that confuse many not having a math background. This is because those having studied sets in math know that equivalent does not mean identical or the same. There are similarities between things or objects that are equivalent. How do you know if two dumbbell sets are equal? If two people make use of the same dumbbell sets and raise it the same number of times, they are said to have completed equal number of sets. In math, two sets are said to be equal if they contain the same number of elements and also the same elements though the order of elements in the two sets may be different. When are two things the same? Equal. When two things are same or identical in amount or quantity, we call them as equal. For example, students obtaining same number of marks are treated equals while two circles having the same area are also considered equal circles. If two people make use of the same dumbbell sets and raise it the same number of times, ... Can cats be compared to dogs? One cannot directly compare cats with dogs, but it is said that they are equivalent when it comes to making great companions for human beings. When two things are same in some specific way, they can be called equivalents. Is a circle equal to a square? In geometry, a circle can be equivalent to a square if they have same areas, but they cannot be treated as equal. In chemistry, the concept of equivalence is used to categorize elements that have the same capacity to react or combine with other elements. What is equal sets? Learn about equal sets. Equal sets, equivalent sets, one-to-one correspondence and cardinality.

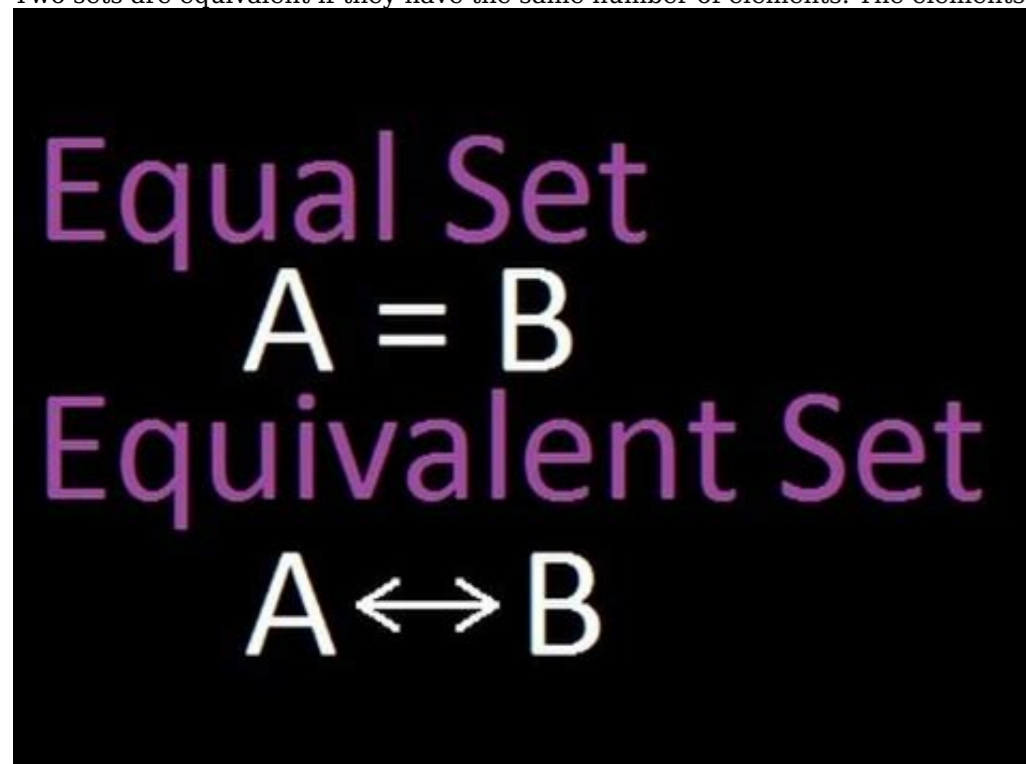
### EQUAL SETS - Equal sets are two or more sets having the same elements.

Ex. A = { 5, 10, 15, 20, 25 }  
B = { 5, 10, 15, 20, 25 }

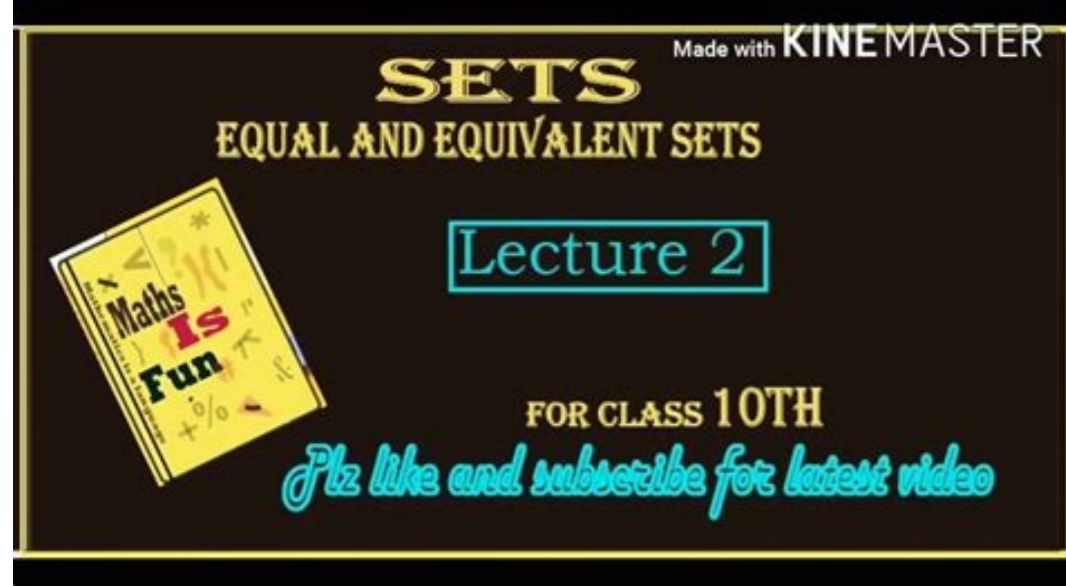
### EQUIVALENT SETS - Equivalent sets are two or more sets with the same cardinality.

Ex. C = { 1, 3, 5, 7 }  
D = { 9, 11, 13, 15 }

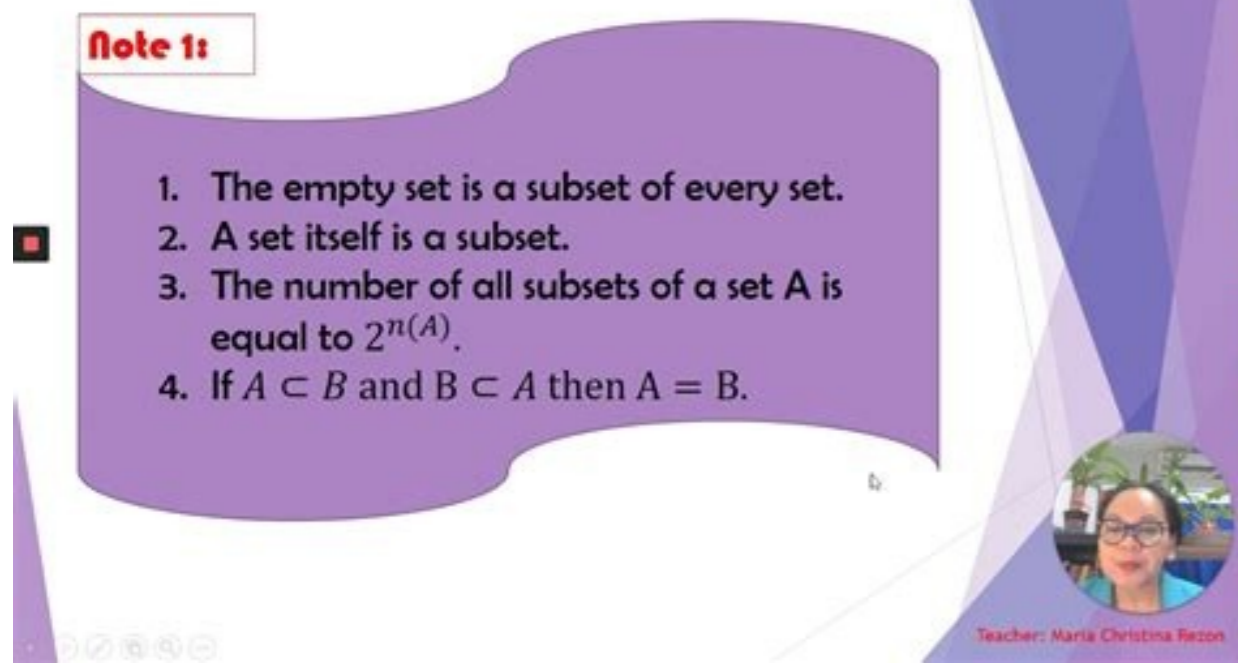
Two sets are equivalent if they have the same number of elements. The elements do not need to be the same. Equivalent sets have one-to-one correspondence to each other. What are the two sets of elements that are equal? Two sets, P and Q, are equal sets if they have exactly the same members.



Each element of P are in Q and each element of Q are in P. The order of elements in a set is not important. What are Equal Sets?



Equal sets are defined as the sets that have the same cardinality and all equal elements. In other words, two or more sets are said to be equal sets if they have the same elements and the same number of elements. For example set A = {1, 2, 3, 4, 5} and B = {1, 2, 3, 4, 5}. Equal Sets Definition If all elements of two or more sets are equal and the number of elements is also equal, then the sets are said to be equal sets. The notation used to denote equal sets is '=', i.e., if sets A and B are equal, then it is written A = B. We know that the order of elements in sets does not matter. Properties of Equal Sets Now, we have understood the meaning of equal sets.



Next, we will study some of its important properties that help in understanding and identifying them: Difference Between Equal And Equivalent Sets The table given below highlights the similarities and differences between equal and equivalent sets: Equal Sets Examples Indulging in rote learning, you are likely to forget concepts. With Cuemath, you will learn visually and be surprised by the outcomes. FAQs on Equal Sets Equal sets are sets in math in which the number of elements is the same and all elements are equal. Equal sets are defined as the sets that have the same cardinality and all equal elements. What is the difference between an equal set and an equivalent set? Are equal sets and equivalent sets the same? What is the difference between an equal set and an equivalent set if they are not the same? Equal sets must contain the exact same elements, although they may be in a different order. Equivalent sets only need to contain the same number of elements, and the elements themselves can be completely different. What is an equal set? What is an equal set? Equal sets have the exact same elements, although they do not have to be in the same order. For example, set A (red, orange, pink, green) is equal to set B (green, orange, pink, red). The two sets have the exact same elements, although they are in different orders. Express two sets that are equal as A = B. If two sets do not contain the same elements, then they are unequal sets. Why are Erica's bags equal to Tessa's? Since the swag bags have the exact same contents, the set of contents of Erica's bag is equal to the set of contents of Tessa's bag, because they contain the exact same elements. They are also equivalent sets because they both contain 4 items, so they have the same number of elements. What is the cardinality of a set? What is meant by the cardinality of a set? The cardinality of a set tells how many elements are in the set. For example, consider set A = {4, 9, 16}. Set A contains 3 elements, so its cardinality is 3. Usually, the notation to show the cardinality of a set is |A|. So, to express the cardinality of set A, write |A| = 3, which means the cardinality of set A is 3. Cardinality is also expressed using n(A) = 3, which again means the cardinality of set A is 3. See the example below of how to use cardinality notation. What are the two sets of elements that are equivalent? These two sets are equivalent: A: {pen, pencil, marker} and B: {plum, nectarine, watermelon} What is each thing in a set called? Each thing in a set is called an element of the set. What is an infinite set? A set can be given a name, such as set A. If a set has no elements, it is considered an empty set, such as { }. If there are an infinite number of elements, it is an infinite set, such as {1, 2, 3, 4, 5, ...}. The dots (...) at the end of the infinite set are called an ellipsis. They indicate the set continues forever. If there are a finite number of elements, it is a finite set, such as {1, 2, 3, 4, 5, ...}. What is an equivalent set? Equivalent Set Definition. Two sets are said to be equivalent if their cardinality number is the same. This means that there must be one to one correspondence between elements of both sets. Here, one to one correspondence means that for each element in set A, there exists an element in set B until sets get exhausted. How to tell if two sets are equivalent? Ans: Two sets A and B are said to be equivalent if they have the same cardinality, i.e. n(A) = n(B). In a general way, two sets are equivalent to each other if the number of elements in both sets is equal. What does equal set mean? Equal Set Definition - Two sets A and B are said to be equal only if each element of then set is stated to be equal. To elaborate, if the two baskets contained an unequal number of oranges or if one basket contained apples and the other contained oranges of the same number, then these cases are said to be examples for unequal sets. Unequal sets are represented by P ≠ Q. Define Equivalent Sets Equivalent sets meaning in Mathematics holds two definitions. Equivalent Sets Definition 1 - Let's say that two sets A and B have the same cardinality, then, there exists an objective function from set A to B. Equivalent Sets Definition 2 - Let's say that two sets A and B are stated to be equivalent only if they have the same cardinality, that is, n(A) = n(B). Thus, to remain or be equivalent, the sets should possess the same cardinality. In other words, if there is a basket of apples and a basket of oranges, then if they are of the same number, we can call these as an example for equivalent sets. This condition means that there should be one to one correspondence between the elements belonging to both the sets. In this context, the one to one condition implies that for each element on the set A, there exists an element in the set B, till both the set A and set B gets exhausted. Therefore, in general, it can be stated that the two sets remain equivalent to each other only if the number of elements in both the sets remain equal. The sets don't need to hold the same elements, or they stay to be a subset of each other. Equal And Equivalent Sets Example If we consider numbers to denote the elements of two sets then we can understand equal and equivalent sets in the following manner. Let's understand equal sets with an example. If M = {1, 3, 9, 5, -7} and N = {5, -7, 3, 1, 9, 1}, then it can be stated that M = N. It is to be noted that no matter how many times an element is repeated in a particular set, the element is counted only once. Also, it is to be pointed out that the order does not matter for the elements for a specific set. Therefore, in terms of cardinal number, equal sets can be stated that: If P = Q,

then  $n(P) = n(Q)$  and for any  $x \in P, x \in Q$  too. Equivalent Set Example If  $S = \{x: x, \text{ where } x \text{ is stated to be a positive integer}\}$  and  $T = \{d: d, \text{ where } d \text{ is said to be a natural number}\}$ , then  $S$  is stated to be equivalent to  $T$ . Thus, it can be stated that an equivalent set is simply a set with an equal number of elements. However, the sets don't need to have the same elements but must comprise the same number of elements. Let's Understand Equivalent Sets With Examples If  $A = \{1, -7, 2000, 11000, 55\}$  and  $B = \{1, 2, 3, 4\}$ , then  $A$  is equivalent to  $B$ . If Set  $G = \{\text{Sweater, Mittens, Scarf, Jacket}\}$  and Set  $H = \{\text{Apples, Bananas, Peaches, Grapes}\}$ , it can be noted that both Set  $G$  and Set  $H$  comprise word elements in different categories and have the same number of elements i.e. four. We are now clear on what equal and equivalent sets are. Now let us expand our knowledge to accommodate a few fascinating facts about the relation between equal and equivalent sets. They are mentioned as important pointers below. Important Points to Remember on Equivalent Sets All the null sets are said to be equivalent to each other. Not all the infinite sets remain equivalent to each other. For example, the equivalent set of all the real numbers and the equivalent set of the integers. If  $P$  and  $Q$  are stated to be two sets such that  $P$  is equal to  $Q$ , that is,  $(P = Q)$ . This example means that two equal sets will always remain to be equivalent, but the converse of the equivalent set may or may not remain true. An equal set can be an equivalent set, but it is not necessary for an equivalent set to be an equal set.