

I'm human





The values  $n=10$  and  $r=4$  are given:  $nPr = \frac{n!}{(n-r)!}$  which equals  $\frac{10!}{(10-4)!} = \frac{10!}{6!} = 5040$  A permutation is an arrangement of elements in a specific order. Combinations, on the other hand, are ways to select objects from a group without considering the order. The formula for permutations is  $nPr = \frac{n!}{(n-r)!}$  and the formula for combinations is  $nCr = \frac{n!}{(n-r)!r!}$ . There's also a formula that relates permutations and combinations:  $nCr = \frac{n!}{r!(n-r)!}$  Examples of permutations include arranging digits, letters, or people in a specific order. Examples of combinations include selecting objects from a menu or choosing people for a group without considering the order. The text then goes on to define variations, which are arrangements of elements in a specific order, with an emphasis on the importance of order. Combinations are defined as arrangements of elements without considering the order, and permutations are defined as arrangements of all elements in a specific order. The text concludes by introducing three levels of exercises: Level 1 includes simple problems that apply permutation formulas; Level 2 includes intermediate-level problems that use combination formulas and the principle of multiplication; and Level 3 includes more complex problems that require the application of addition, variation, and combination principles. Finally, a homework assignment is given for two men and three women. El texto describe conceptos relacionados a estadística, específicamente permutaciones y combinaciones. Una permutación es una disposición de elementos teniendo en cuenta el orden, mientras que una combinación es una selección sin considerar el orden. Se presentan ejemplos para ilustrar la diferencia entre ambas: 1. Cinco personas se sienten en un cine y encuentran asientos juntos, pero las tres chicas no quieren estar al lado de cada una. Hay  $3! \times 2! = 12$  formas diferentes. 2. Un concurso otorga premios para primer y segundo lugar, lo que importa el orden y la disposición de los elementos. 3. Un chef prepara una ensalada utilizando solo 2 ingredientes, lo que no implica el orden en que se toman los ingredientes. 4. Se organiza un torneo de ajedrez para 10 integrantes, donde cada uno jugará con otros sin partidos de revancha. El número total de arreglos o formas se calcula con la fórmula de varias maneras para elegir un representante. b) The number of ways to choose a committee of three members, where at least one member is a woman. Solution: In this case, we are not told that the committee has ranks, so order does not matter. We will apply the combination formula. a) The number of ways to choose a group representative. From a total of 10 members, we will select one. b) The number of ways to choose a committee of three members, where at least one member is a woman. At least one of the three members must be a woman, which means the committee can be formed by 1, 2, or 3 women. If the committee is composed of 1 woman, it means we will select one from four women and two from six men. If the committee is composed of 2 women, it means we will select two from four women and one from six men. If the committee is composed of 3 women, it means we will select three from four women and none from six men. In total, we have: Next, a guide to exercises in PDF that we will solve together in the videos. Permutations and combinations, solved exercises in PDF We will now review some basic concepts of permutations and combinations and solve some simple problems. In this second level, we will solve two additional problems: one on permutations and another on combinations. Now, let's see a classic exercise on permutations that has several sections, with the last ones being very challenging: Next comes an interesting problem where we will combine permutations and combinations with the principle of addition and the principle of multiplication. When there are repeated elements, the rules of the game and the formula change: If the elements are ordered in a circle, then the formula changes. Let's see what it's about: With four different fruits, how many fruit juices can be prepared? A juice is prepared with at least two fruits. Solution: The juices can be prepared with 2 fruits, 3 fruits, or 4 fruits: In total, 11 fruit juices can be prepared.

Combinaties permutaties. Ejemplos de permutaciones variaciones y combinaciones. Permutaties combinaties en herhalingen. Combinaties en permutaties vwo.