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CHARACTERISTICS OF INTEGRATED TEACHING IN PRIMARY SCHOOLS

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Abstract:

In this article discussed that, importance of interdisciplinary integration, some of the requirements and conditions for the introduction of integrated education in the primary grades, and described in detail the general features of the integrated course.

Keywords: placements, enterprises**,** integration, interdisciplinary integration, educational effectiveness, primary education, integration lessons.

Unique placements. When building a selection, elements from the parent set may or may not be retrieved repeatedly. Accordingly, selections are divided into repeated and non-repeated types.
Let a set of n different elements be given. Let's choose k elements from it one by one. If the order of elements in the selection is important, we create an ordered selection that differs from each other in the selected elements or sequence. Definition: k placement of n elements (n≥k) refers to such selections, each of which has k elements, and the selections differ from each other in the composition or order of the elements.

Unique placements. Given a primary set with n elements, k (k < n) elements are taken from it to make selections. A selection made from arbitrary k different elements of the main set is called a random arrangement of n elements from k.
A random permutation (n≥k) has n ways to select the first element, n - 1 ways to select the second element, n - 2 ways to select the third element, etc., and n - k + 1 to select the last k element There is a method.
So, the number of placements according to the multiplication rule

$$A_n^k = n \cdot (n-1) \cdot \ \dots \ \cdot (n-k+1) \quad \textbf{yoki} \quad A_n^k = \frac{n!}{(n-k)!} \quad \text{ga teng ekan}$$

Thus, unique arrangements of n elements out of k are such selections that have k (k < n) elements, and the selections differ from each other in the composition or order of their elements.
Distinctive features of non-repetitive placements:
Not all elements of the master set are involved in placement
(k < n);
The elements of the master set included in the placement are different, that is, they are not repeated.
The position of the element included in the placements is important, i.e. the order.
Now let's find the number of all unique permutations. For this, we will solve the problem by reasoning.
Let's look at k cells. In the first cell, we write how many different ways it is possible to put n elements of the main set. Of course, it will be n, because you can put any number of n elements. We write n in the 1st cell. In the second cell, we write how many different ways it is possible to put the remaining n - 1 elements of the main set (because, according to the definition, the elements are not repeated), that is, n - 1.
We write n - 1 in the 2nd cell and so on.
n – (k - 2) in k – 1 -cell,
And in the k cell we write n – (k – 1).
n n - 1 n - 2 ... n - (k - 2) n - (k - 1)
Then, according to the rule of multiplication, the number of unique placements of n elements out of k is found as follows and is defined as A_n^k:

$$A_n^k = n \cdot (n-1) \cdot (n-2) \cdot \dots \cdot (n-k+2)) \cdot (n-k+1)$$

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This formula allows you to quickly calculate the number of unique placements without thinking. Only if it is determined that the addition is a non-repetitive placement.

Let's define a more memorable expression of this formula using factorials:

$n! = 1\cdot 2\cdot 3\cdot \ldots \cdot (n-1)\cdot n$ and

$(n-k)! = 1\cdot 2\cdot 3\cdot \ldots \cdot (n-(k-1))\cdot (n-k)$

considering that, we can express A_n^k differently as follows:

$$\frac{n!}{(n-k)!} = \frac{1\cdot 2\cdot 3\cdot \ldots \cdot (n-1)\cdot n}{1\cdot 2\cdot 3\cdot \ldots \cdot (n-(k-1))\cdot (n-k)} =$$

$$= \frac{1\cdot 2\cdot 3\cdot \ldots \cdot (n-(k-1))\cdot (n-k)\cdot (n-k+1)\cdot \ldots \cdot (n-1)\cdot n}{1\cdot 2\cdot 3\cdot \ldots \cdot (n-(k-1))\cdot (n-k)} =$$

$$= n\cdot (n-1)\cdot \ldots \cdot (n-k+2))\cdot (n-k+1) = A_n^k$$

So, the number of unique placements is $A_n^k = n!/(n-k)!$ expressed by the formula.

Issue 1. How many seven-digit phone numbers are there, all of which are different?

Solving. This issue could be solved by reasoning as follows:

Method 1. We will solve the problem with consideration.

You can choose numbers for the first room in 10 different ways (numbers starting with 0 are also given now), for the remaining numbers in 9 different ways, for the third room in 8 different ways, and so on for the last room in 4 different ways.

So,

10 9 8 7 6 5 4

So, the number of seven-digit phone numbers with all different numbers is $10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 = 604{,}800$.

Method 2. In this way, we are no longer thinking. First of all, we determine whether the sample being created according to the condition of the problem is a random placement.

In our case, the grand total consists of 10 ($n = 10$) numbers, and 7 numbers should participate in the selection ($k = 7$).

Not all elements of the main set participate in the selection ($7 < 10$);

The elements of the master set included in the selection are different, that is, they are not repeated.

The order of the selected numbers is important.

So, this selection is random placement.

Determining the number of unique placements found in it

$A_n^k=n\cdot(n-1)\cdot(n-2)\cdot\ldots\cdot(n-k+2))\cdot(n-k+1)$ or

$A_n^k = n!/(n-k)!$ we use the formula (in our case $n = 10$, $k = 7$).

$A_{10}^7=10\cdot 9\cdot 8\cdot 7\cdot 6\cdot 5\cdot 4=604\ 800$ or

$A_{10}^7 = 10!/3! = (1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8 \cdot 9 \cdot 10)/(1 \cdot 2 \cdot 3) = 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8 \cdot 9 \cdot 10 = 604\ 800$, we find the number of seven-digit telephone numbers, all of which are different.

Answer: 604,800

Alphabet problems are solved using the following confirmation (its
justify it yourself):

The alphabet consists of n letters. The number of words consisting of k different letters ($k < n$) (i.e. unique selections) is equal to A_n^k.

Issue 2. 10 teams are participating in the matches for gold, silver and bronze medals at the World Football Championship. In how many different ways can the medals be distributed among the teams?

Solution: First of all, according to the condition of the problem, we will determine whether the selection is a random placement.

In our case, the total consists of 10 ($n = 10$) teams, and 3 teams should be selected in the sample ($k = 3$).

All elements of the main set are not included in the selection ($3 < 10$);

The elements of the master set included in the selection are different, that is, they are not repeated.

It is important what place the participating team is in, i.e. the order.

So, this selection is random placement.

$A_n^k = n!/(n-k)!$ we use the formula (in our case $n = 10$, $k = 3$).

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$A_{10}^3 = 10!/7! = (1 \cdot 2 \cdot 3\ 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8 \cdot 9 \cdot 10)/(1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7) = 8 \cdot 9 \cdot 10 = 720$

Answer: 720 different.

repeated places

given a main set with n elements, k (k < n) elements are taken from it and selections are made. let it be possible to repeat the elements.

a selection made from elements of the main set that can be repeated k times is called repeated placement of n elements from k.

specific features of repeated placements:

not all elements of the main set are involved in placement (k < n);

the elements of the master set included in the placement are not distinct, which means they can be repeated.

the position of the element included in the placements is important, i.e. the order.

now let's find the number of all repeated placements. for this, we consider the above.

we look at k cells. in the first cell, we write how many different ways it is possible to put n elements of the main set. of course, it will be n, because you can put any number of n elements.

we write n in the 1st cell.

since the selection is repeated in the second cell, we write again how many different ways n elements of the main set can be placed, i.e. n.

we write n in the 2nd cell and so on.

k – 1 - cell n,

we also write n in the k-cell.

n n n ... n n

in it, according to the rule of multiplication, the number of repeated placements of n elements from k is found and is defined as a_n^k:

$\overline{(a_n^k)} = n \cdot n \cdot n \cdot \ldots \cdot n \cdot n = n^k$

issue 2. how many are all seven digit phone numbers?

solving. this issue could be solved by reasoning as follows:

method 1. we will solve the problem with consideration. you can choose numbers for the first room in 10 different ways (numbers starting with 0 are also given now), and numbers for the second room in 10 different ways. because numbers can be returned. numbers can be chosen in 10 different ways for the third room, and so on for the last room in 10 different ways.

so,

10 10 10 10 10 10 10

So, seven digits are the number of phone numbers

$10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = 107 = 10{,}000{,}000$.

Method 2. In this way, we are no longer thinking. First of all, we determine that the selection being made according to the condition of the problem is a repeated placement.

In our case, the grand total consists of 10 (n = 10) numbers, and 7 numbers should participate in the selection (k = 7).

Not all elements of the main set participate in the selection (7 < 10);

Items of the master set included in the selection can be repeated.

The order of the selected numbers is important.

So, this selection is repeated placement.

Determining the number of duplicate placements found in it

We use the formula $\overline{(A_n^k)} = n \cdot n \cdot n \cdot \ldots \cdot n \cdot n = n^k$ (in our case n = 10, k = 7).

$\overline{(A_n^k)} = 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = 10^7 = 10\ 000\ 000$

Answer: 10,000,000.

Alphabet problems are solved using the following statement (prove its correctness yourself):

Let the alphabet consist of n letters. Then the number of words consisting of k letters (k < n) (that is, repeated choices) is equal to $\overline{(A_n^k)}$.

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58. (v20/21-129-24) Agar natural p, m, n sonlar uchun $p! = 1\cdot2\cdot3\cdot\ldots\cdot(p-1)\cdot p$,

$$A_m^n = \frac{m!}{(m-n)!}, \quad C_m^n = \frac{m!}{n!(m-n)!}$$ bo'lsa,

$A_x^3 + C_x^{x-2} = 14x$ tenglamani yeching.

A) $-2,5$ B) 0
C) $-2,5;\ 0,5$ D) 5

Issue 3. If there are only odd numbers in the decimal notation of a natural number, we call such a number "beautiful". How many four-digit numbers are there in total?
Solving. We solve the problem in two different ways.
Method 1. We will solve the problem by reasoning as in problem 5 of the above paragraph (-picture):
Odd numbers can be placed in the first room of a four-digit number in 5 different ways, and numbers can be placed in the second room in 5 different ways. Because numbers can be returned. Odd numbers can be placed in the third and fourth rooms in 5 different ways.
So, according to the multiplication rule, the number of beautiful four-digit numbers
5 ·5 ·5 · 5 = 54 = 625.
Method 2. In this way, we are no longer thinking. First of all, we determine that the selection being made according to the condition of the problem is a repeated placement.
In our case, the grand total consists of 5 (n = 5) odd numbers, and 4 numbers should participate in the selection (k = 4).
All elements of the main set are not included in the selection (4 < 5);
Items of the master set included in the selection can be repeated.
The order of the selected numbers is important.
So, this selection is repeated placement.
Determining the number of duplicate placements found in it
We use the formula (A_n^k)‾=n·n·n·… ·n· n=n^k (in our case n = 5, k = 4).
(A_5^4)‾=5·5·5 ·5· 5=5^4=625
Answer: 625.
Issue 3. How many three-digit numbers can be formed from the numbers 0, 1, 2, 3, 4, 5, 6?
Solution: Taking into account that the word "total" in the question is used as an aggregate, we also take into account three-digit numbers whose numbers are repeated.
At the same time, we also take into account that the number 0 cannot be in the room of faces of a three-digit number.
As a result, we determine that the number of three-digit numbers is N · 6 · 7 · 7 · 294.
Answer: 294.

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Issue 4. The safe password consists of 6 digits. If they can be dialed consecutively and repeated, how many combinations can there be?

Solution: According to the condition,

n = 10, k = 6

order is important, there is repetition (numbers can be repeated).

A_n^r=n^r

A_10^6= 〖10〗 ^6

Answer: 〖10〗 ^6

Control questions:

What do you mean by unique placements?

How are duplicate placements calculated?

What do you mean by duplicate placements?

How are duplicate placements calculated?

What is the difference between unique and repeated placements?

How do you explain repeated placements to students at school?

REFERENCES:

1. B.Q.Xaydarov, N.N.Tashtemirova, O'rta maktabda ma'lumotlar bilan ishlash va kombinatorika elementlarini o'qitish, o'quv-uslubiy qo'llanma, "Yangiyul Poligrapf Service", Toshkent, 2021-yil, 144 bet.
2. S.Alixonov, Matematika o'qitish metodikasi, o'quv qo'llanma, Toshkent, O'qituvchi, 2011-y.
3. F.X.Saydaliyeva, N.O.Eshpo'latov, Matematika o'qitish metodikasidan laboratoriya mashg'ulotlari, TDPU, 2007- y., 67 b.
4. M. A. Mirzaahmedov, A. A. Rahimqoriyev, Sh. N. Ismailov, M. A. To'xtaxodjayeva Matematika 6-sinf. Umumiy o'rta ta'lim maktablari 6-sinfi uchun darslik. –T.: "O'qituvchi", 2017 y.
5. Sh. A. Alimov, O. R. Xolmuhamedov, M. A. Mirzaahmedov Algebra. Umumiy o'rta ta'lim maktablari 7-sinflari uchun darslik.–T.: "O'qituvchi", 2017- y.
6. U.X.Xonqulov, Matematikaning stoxastika yo'nalishi elementlari.-T.: "Fan va texnologiya", 2017 y.
7. U.X. Xonqulov, Matematikaning fanini o'qitishda kombinatorika masalalari. Guliston. 2008 y.
8. Бунимович Е. А., Булычев В. А. Вероятность и статистика. 5-9 кл.: Пособие для общеобразоват. учеб. заведений. – М.: Дрофа, 2002.
9. Макарычев Ю. Н. Алгебра: элементы статистики и теории вероятностей: учеб. пособие для учащихся 7-9 кл. общеобразоват. учреждений / Ю. Н. Макарычев, Н. Г. Миндюк; под. ред. С. А. Теляковского. – 2-е изд. – М.: Просвещение, 2004.
10. Мордкович А. Г., Семенов П. В. События. Вероятности. Статистическая обработка данных: Доп. Параграфы к курсу алгебры 7-9 кл. общеобразват. Учреждений. – М.: Мнемозина, 2003.
11. DTM ning 2019-yilda tavsiya qilingan testlari.
12. Саломов А.А. Самостоятельные занятия на уроках математика // Совершенствование организационных форм и методов преподавания математика, информатики и ВТ в школах и педвузах : Тезисы докладов Всесоюзного семинара – совещания. – Гулистан – 1990.

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INTERNET RESURSLARI:

13. http:/www.markaz.tdi.uz – Ta'lim sifatini baholash bo'yicha xalqaro tadqiqotlarni amalga oshirish milliy markazi sayti
14. @milliymarkaz_aloqabot – Ta'lim sifatini baholash bo'yicha xalqaro tadqiqotlarni amalga oshirish milliy markazi telegram boti.
15. http://www.rtm.uz – Respublika ta'lim markazi sayti.
16. http://www.dtm.uz – Respublika test markazi sayti.