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Combinări de n elemente luate câte k

$$C_n^k = \frac{A_n^k}{P_k} = \frac{n(n-1)\cdot...\cdot(n-k+1)}{1\cdot2\cdot...\cdot k}$$

$A = \{a,b,c,d\}$

$n = 4; k = 3$

$\{a,b,c\}$

$\{a,b,d\}$

$\{a,c,d\}$

$\{b,c.d\}$

$$C_4^3 = \frac{A_4^3}{P_3} = \frac{4\cdot3\cdot2}{1\cdot2\cdot3} = 4$$

```cpp
#include<iostream>
using namespace std;
int n,p,v[50],vk,jo,k;
void init ()
{
 v[p]=0;
}

int urm()
{
   if(v[p]<n)
        {
        v[p]++;
        return 1;
        }
   else return 0;
}

int verif ()
{
   if(v[p]<=v[p-1])
        return 0;
   else
        return 1;
}
```

```cpp
int sol ()
{
return p==k;
}

void tip ()
{
int i;
for(i=1;i<=k;i++)
        cout <<v[i]<<" ";
cout <<endl;
}
```

```
void backtr ()
{
p=1;
init ();
while(p>0)
        {
        vk=1;
        jo=0;
        while(vk && !jo)
                {
                vk=urm();
                if(vk)
                jo=verif ();
                }
        if(vk)
                if(sol ())
                        tip ();
                else
                        {
                        p++;
                        init ();
                        }
        else p--;
        }
}
```

```cpp
int main ()
{
  cout<<"n= " ; cin>>n;
  cout<<"k= " ; cin>>k;
  backtr ();
}
```

```
n= 4
k= 3
1  2  3
1  2  4
1  3  4
2  3  4
```