

#### Задание 8 (№12240).

Сколько существует девятеричных пятизначных чисел, содержащих в своей записи ровно одну цифру 5, в которых никакие две одинаковые цифры не стоят рядом?

*# 1 способ*

```
from itertools import *
k=0
for s in product(range(9), repeat=5):
    if s[0]>0 and s.count(5)==1 and all(s[i]!=s[i+1] for i in range(4)):
        k+=1
        print(s)
print(k)
```

*# 2 способ*

```
from itertools import *
k=0
for c in product('012345678', repeat=5):
    s=''.join(c)
    if s[0]>'0' and s.count('5')==1 and all(s[i]!=s[i+1] for i in range(4)):
        k+=1
print('k=', k)
```

*# 3 способ*

```
from itertools import *
k=0
for c in product('012345678', repeat=5):
    k_p = 0
    s=''.join(c)
    if s[0]>'0' and s.count('5')==1:
        for i in range(4):
            if s[i]==s[i+1]:
                k_p+=1
                break
        if k_p==0:
            k+=1
print('k=', k)
```

*# 4 способ*

```
from itertools import *
```

```
k=0
```

```
for c in product('012345678', repeat=5):
```

```
    k_p = 0
```

```
    s=''.join(c)
```

```
        if s[0]>'0' and s.count('5')==1 and "00" not in s and "11" not in s and "22" not in s and  
"33" not in s and "44" not in s and "66" not in s and "77" not in s and "88" not in s:
```

```
            k+=1
```

```
print('k=', k)
```