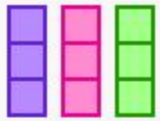
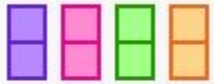
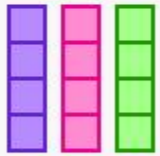
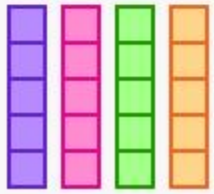
Multiplication

Idea

3 × 3		3 + 3 + 3 = 9 3 × 3 = 9
2 × 4		2 + 2 + 2 + 2 = 8 2 × 4 = 8
4 × 3		4 + 4 + 4 = 12 4 × 3 = 12
5 × 4		5 + 5 + 5 + 5 = 20 5 × 4 = 20

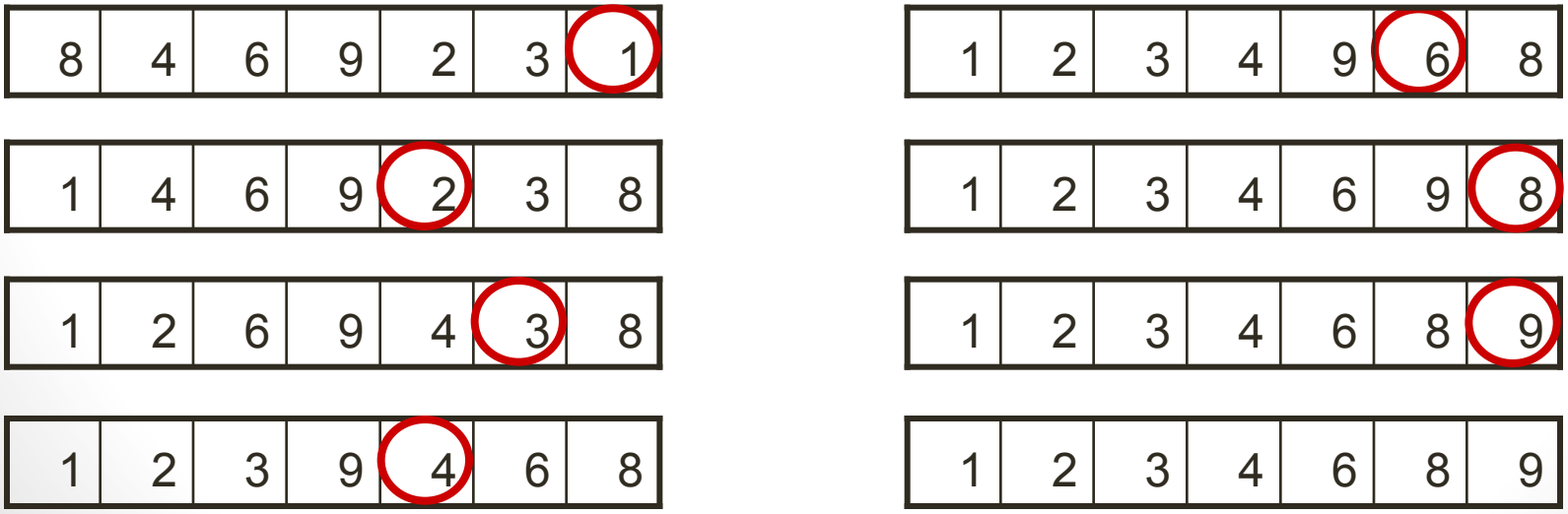
Multiplication

```
;multiplication
[org 0x0100]

        mov dx, 4
        mov cx, 3
        mov ax, 0

loop1:  add ax, dx
        sub cx, 1
        cmp cx, 0
        jne loop1

mov ax, 0x4c00
int 0x21
```

Sorting Algorithms

Selection Sort

- Idea:
  - Find the smallest element in the array
  - Exchange it with the element in the first position
  - Find the second smallest element and exchange it with the element in the second position
  - Continue until the array is sorted



Selection Sort Pseudo code

Alg.: SELECTION-SORT*(A)*

```
n ← length[A]
for j ← 0 to n - 2
    smallest ← j
        for i ← j + 1 to n-1
            if A[i] < A[smallest]
                smallest ← i
        exchange A[j] ↔ A[smallest]
```

Factorial

Factorial function

```
int fac(int numb)
{
      int product=1;
      while(numb>1)
      {
         product *= numb;
         numb--;
      }
      return product;
}
```