

課題4

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ソースコード

```
#include <stdio.h>

int a[10] = {1, 2, 5, 12, 29, 70, 169, 408, 985, 2378};

int main(void){
    int* pa;
    int* pb;

    printf("%p:[%2d]←a[0]\n", &a[0], a[0]);
    printf("%p:[%2d]←a[1]\n", &a[1], a[1]);
    printf("%p:[%2d]←a[2]\n", &a[2], a[2]);
    printf("%p:[%2d]←a[3]\n", &a[3], a[3]);

    printf("a=%p[%2d] &a[0]=%p[%2d]\n", a, *a, &a[0], a[0]);
    printf("a+1=%p[%2d] &a[1]=%p[%2d]\n", a+1, *(a+1), &a[1], a[1]);
    printf("a+2=%p[%2d] &a[2]=%p[%2d]\n", a+2, *(a+2), &a[2], a[2]);
    printf("a+3=%p[%2d] &a[3]=%p[%2d]\n", a+3, *(a+3), &a[3], a[3]);

    pa = a;
    pb = a+3;
    printf("&pa=%p, pa=%p, *pa=%d\n", &pa, pa, *pa);
    printf("&pb=%p, pb=%p, *pb=%d\n", &pb, pb, *pb);

    pb=pb+1;
    printf("pb=%p[%2d]\n", pb, *pb);
    printf("pb - pa = %ld\n", pb-pa);

    return 0;
}
```

結果

```
masuda@kubo-ZA9C-R49:~/github/C_Intermediate/src$ ./program042
0x55805c83d020: [ 1]←a[0]
0x55805c83d024: [ 2]←a[1]
0x55805c83d028: [ 5]←a[2]
0x55805c83d02c: [12]←a[3]
a=0x55805c83d020[0] 0x55805c83d020=0x55805c83d020
a+1=0x55805c83d024[1] 0x55805c83d024=0x55805c83d024
a+2=0x55805c83d028[2] 0x55805c83d028=0x55805c83d028
a+3=0x55805c83d02c[3] 0x55805c83d02c=0x55805c83d02c
&pa=0x55805c83d020, pa=0x55805c83d020, *pa=1
&pb=0x55805c83d02c, pb=0x55805c83d02c, *pb=12
pb=0x55805c83d02d[3]
pb - pa = 4
```

```
a=0x55805c83d020[ 1] &a[0]=0x55805c83d020[ 1]
a+1=0x55805c83d024[ 2] &a[1]=0x55805c83d024[ 2]
a+2=0x55805c83d028[ 5] &a[2]=0x55805c83d028[ 5]
a+3=0x55805c83d02c[12] &a[3]=0x55805c83d02c[12]
&pa=0x7ffec6687108, pa=0x55805c83d020, *pa=1
&pb=0x7ffec6687110, pb=0x55805c83d02c, *pb=12
pb=0x55805c83d030[29]
pb - pa = 4
```

まとめ

- 配列a[0]はポインタaと同じ意味で、(a+1)はa[1]を指す。
 - aはアドレスを表して、&a[0]と同じ意味