Home Work 2: Pointer Related Complete Home Work

Dry run these codes and see what will be the output. If you find some errors clearly mention those errors.

1)

```
void f1(int *, int);
void f2(int *, int);
int  main()
{
 int a;
 int b;
 a=3;
 b=5;
 f1(&a,b);
 f2(&a,b);
 cout<< a<<","<<b<<",";
 cout<< a<<","<<b;
 getchar();
 }
void f1( int* p , int q)
{
  int tmp;
  tmp =*p;
  *p = q;
  q= tmp;
}
void f2( int* p , int q)
{
  int tmp;
  tmp =*p;
  *p = q;
   q= tmp;
}
```

2)

```
int fun2(char *a,char *b)
{
for(; *a==*b;a++,b++)
        if(*a=='\0')
                return 0;
return *a-*b;
}
```

```
        int main(){
        char a[10]="date", b[10]="data";
        cout<<fun2(a,b)<<endl;
        }
```

3)

```
void main( )
{
void *vp;
char ch = 'g', *cp = "goofy";
int j = 20;
vp = &ch;
cout<< *(char *)vp;
vp = &j;
cout<<*(int *)vp;
vp = cp;
cout<<(char *)vp + 3<<endl;
}
```

4)

```
void main()
{
int const *p=5;
cout<<++(*p);
}
```

5)

```
void main ( )
{
        static char *s[ ] = {"black", "white", "yellow", "violet"};
        char **ptr[ ] = {s+3, s+2, s+1, s}, ***p;
        p = ptr;
        **++p;
        cout<<*--*++p + 3<<endl;
}
```

6)

```
char *ptr;
char myString[] = "programing I";
ptr = myString;
ptr += 5;
 cout<<ptr;
```

7)

```
int arr[10] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9};
int *ptr = arr + 2;
cout<<ptr[ 7 ];
```

8)

```
char *buffer = " Hello World";
char *ptr = buffer;
ptr += 5;
cout<<ptr<<endl;
cout<<buffer;
```

9)

```
int x=20;

int &y =x;
int *p = &x;
x=x+20;

y=y+50;
cout<< *p << " "<< y;
```

10)

```
void magic(int *sp, int *ep){
        while (sp >= ep){
                cout << *sp << " ";
                sp--;
        }
        sp += 4;
        cout << endl;
        while (sp >= ep){
                cout << *sp << " ";
                sp--;
        }
        cout << endl;
}

int main(){
        int array[] = { 5, 4, 3, 2, 1, 2, 3, , 4, 5 };
        magic(array + 8, array);
        return 0;
}
```

11)

```
void my_fun(int *p, int *s) {
	s = p;
	*s = 23;
	int x = 5;
	s = &x;
	return;
}
int main() {
	int x = 3;
	int *p = &x;
	int *s;
	s = &x;
	my_fun(p, s);
	cout << "x = " << x << " *p=" << *p << " *s=" << *s;
	return 0;
}
```

12)

```
	void Encrypt(char *T)
	{
		for (int i = 0; *T != '\0'; i += 1)
		{
		if (*T == 'W' || *T == 'H' || *T == 'D')
				*T = '#';
			else if (*T >= 'a'!&& *T <= 'z')
				*T -= 32;
			else if (i % 2 == 0)
				*T = *T - 1;
			else
				*T = '&';
			T = T + 1;
		}
	}
	int main()
	{
		char text[] = "Hello WorlD";
		Encrypt(text);
		cout << text << endl;
		return 0;
	}
```

13)

```
	int num = 0;
```

```
int* func(int num)
{
        num += 5;
        return &::num * num + 5;
}
int main()
{
        int num = 10;
        int * q = func(num);
        cout << *q;
    return 0;
}
```

14)

```
void fun(int *p, int *s) {
        s = p;
        *s = 10;
        int x = 5;
        s = &x;
        return;
}

int main() {
        int x = 5;
        int *p = &x;
        int *s;
        s = &x;
        fun(p, s);

cout << "x = " << x << " *p=" << *p << " *s=" << *s;
        return 0;
}
```

15)

```
void f(int *p, int *q, int* k)
{
  p = q;
  f = p;
  q = f;
  *p = 2 ,*q=*f+3;*f=*f+1;
}
```

```
int i = 0, j = 1,f=6;
int main()
{
 f(&i, &j,&f);
 cout<<i<< f <<j;
 return 0;
}
```

16)

```
void My_Func ( int *q, int row, int col )
{
        int i, j ;
        for ( i = 0 ; i < row ; i++ )
        {
                for ( j = 0 ; j < i ; j++ )

                        * ( q + i * col + j ) = * ( q + i * col + j ) *3.2 ;
        }
}
main()
{
        int a[5][5] = { 1, 2, 3, 4, 5, 6,7,8,9, 0,1, 6,3,3,4,1,9,8,6,1};
        My_Func ( a, 5, 5 );
}
```

17)

What is wrong with this program?

```
#include <iostream.h>
int main()
{
int *p1 = new int ;
                *p1 = 100;
if( p1!=NULL )
{
int *p2 = p1 ;
delete p2 ;
}
                cout << *p1 << endl ;

return 0;
}
```

18)

```
int main ( )
{
char *s[4] = {"black", "white", "yellow", "violet"};

        cout<<(*(s+1)+2)<<endl;
        cout<<*(*(s+2)+3);
return 0;
}
```

19)

```
int check1(char *x, char *y)
{
        return strcmp(x,y);

}

int check2(char *x, char *y)
{
        return strncmp(x,y,3);

}

int main()
{
    char e1[] = "Alpha";
    char e2[] = "Bravo";
        char e3[] = "Alpak";

        cout<<check1(e1, e2)<<endl;
        cout<<check1(e1, e1)<<endl;
        cout<<check2(e1, e3)<<endl;

return 0;
}
```

20)

```
void print(const char* p){
        for(int i = 0; i < strlen(p);){
                cout<<p<<endl;
                p++;
        }
}
int main(){
```

```
        char p[] ={'1','2','3','\0'};
        print(p);
        return 0;
}
```

21)

```
        void print(const char* p){
                for(int i = 0; i < strlen(p); i++){
                        cout<<p<<endl;
                        p++;
                }
        }
        int main(){
                char p[] ={'a','b','c','\0'};
                print(p);
                return 0;
        }
```

22)

```
        int g_One=1;
        void func(int* pInt){
                pInt=&g_One;
        }
        void func2(int*& rpInt){
                rpInt=&g_One;
        }
        int main(){
                int nvar=2;
                int* pvar=&nvar;
                func(pvar);
                cout<<*pvar<<endl;
                func2(pvar);
                cout<<*pvar<<endl;
                return 0;
        }
```

23)

```
        int main(){
        int array[] = {1,2,3,4,5};
        int*p = array;
        cout<<(p+(10-5)/2 == array+1); // not sure if it is possible
        return 0;
        }
```

24)

```
int main(){
   int x = 10; // ok
   int *q = &x; // going good
   int const*const my_strange_const_friend=q; // this is cruel
   cout<<my_strange_const_friend <<endl; // speechless here
   cout<<*my_strange_const_friend  <<endl;
   cout<<&my_strange_const_friend <<"\t"<<&q; // speechless here, again!
   return 0;
}
```

25)

```
int main(){
   int data = 10;
   int const * what;
   what = &data; // oh dear
   cout<<what<<"\t"
                  <<*what<<"\\"
                  <<&what; // interesting ;)
         return 0;
}
```