

1. Give the output of the following programs.

a. #include <stdio.h>

```
int f(int [], int);
int g(int *, int *);

int main() {
    int a[] = {10, 20, 30, 40};
    int b[] = {3, 6, 9, 12, 15};
    int *p, *q;

    p = &a[2];
    q = &b[3];

    *q = f(a, 4);
    printf("%d %d %d\n", *p, *q, b[3]);

    *p = f(b, 5);
    printf("%d %d %d\n", *p, *q, b[3]);

    printf("%d\n", f(a, 2));
    printf("%d %d\n", a[2], *p);

    printf("%d\n", g(p, q));
    printf("%d %d\n", *p, *q);

    return 0;
}
```

```
int f(int arr[], int sz) {
    int q = 1, i;
    for (i = 0; i < sz; i++)
        q += arr[i]++;
    return q;
}
```

```
int g(int *p1, int *p2) {
    int tmp = *p1;
    *p1 = *p2;
    *p2 = tmp;
    return !! tmp + !! *p1;
}
```

31 101 101

135 102 102

33

135 135

2

102 135

b. #include <stdio.h>  
#include <string.h>

```
int mystery(char []);

int main() {
    char s1[] = "chicken";
    char s2[200] = "fish";
    char *p, *q;

    printf("%d %d %d\n", (int) strlen(s1),
                                   (int) strlen(s2),
                                   !! strcmp(s1, s2));

    p = &s1[1];
    q = &s2[0];

    printf("%d %s\n", mystery(p), p);
    printf("%d %s\n", mystery(q), q);

    strcpy(s1, s2);
    printf("%c %d %d\n", *p,
                                   s1 == s2,
                                   !! strcmp(s1, s2));

    *q = 'd';
    printf("%s\n", s2);

    return 0;
}
```

```
int mystery(char str[]) {
    static int ct = 0;
    int i;
    for (i = 0; str[i]; i++)
        ct++;
    return ++ct;
}
```

7 4 1

7 hicken

12 fish

i 0 0

dish