1. What does the following program print? Confine your answer to the given space next to the program.

```
int x=15;
int fun(int y);
void main() {
    printf("%d", (fun(x)+30)+x);
}
int fun(int y) {
    y+=x;
    x-=y;
    y-=x;
    return y;
}
```

2. What does the following program print? Confine your answer to the given space next to the program.

```
int a[3][4]= {{1, 2, 3, 3}, {4, 5, 6, 6}, {7, 8, 9, 9}};
short b[4][2]= {{1, 1}, {1, 0}, {0, 0}, {0, 1}}, i;
void main() {
    for (i=0; 2*b[i][1]+b[i][0]; i++)
        printf("%d %d ", a[b[i][0]][i], a[i+1][i]);
}
```

3. What does the following program print? Confine your answer to the given space below the program.

```
int a[3][4]= {{1, 2, 3, 3}, {4, 5, 6, 6}, {7, 8, 9, 9}}, i, j, k, t;
void fun(int *a) {
    for (k=0, t=a[k]; k<3; k++)
        a[k]=a[k+1];
    a[k]=t;
}
```
void main() {
    for (i=0; i<3; i++)
        for (j=0; j<i; j++)
            fun(a[i]);
    printf("%d", a[0][1]+a[1][2]+a[2][3]);
}

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3. The following program finds the common elements in two different integer arrays (fibArray and primeArray) and stores them in another array called commonArray. At the end of the program, it prints out how many common elements there are. There are four bugs in the code. Identify them and then fix them.

```c
1 int main()
2 {
3    int fibArray[] = { 1, 2, 3, 5, 8, 13, 21, 34, 55, 89 };
4    int primeArray[] = { 2, 3, 5, 7, 11, 13, 17, 19, 23, 29 };
5    int commonArray[];
6    int i, j;
7
8    for ( i = 0; i < 10; ++i )
9    {
10       for ( j = 0; j < 10; ++j )
11           if (fibArray[i] = primeArray[j])
12           {
13               commonArray[j] = primeArray[j];
14               ++n;
15           }
16     }
17     printf("The total number of common elements is %d\n", n);
18     return 0;
19 }
```

**Line 5:** commonArray has no size. Fix: int commonArray[10];
**Line 6:** n is not declared. Fix: add declaration int n = 0;
**Line 12:** assignment operator used instead of equality operator. Fix: change = to ==.
**Line 14:** logic bug. Index to commonArray should be n, not j. Fix: change j to n.

4. Convert the following for loop into a while loop.
```c
for ( i = 0; i < 100; i++ )
{
    if ( i % 10 == 0 )
        printf("\n");

    n += array[i];
    printf("%d ", n);
}
```

```c
i = 0;
while ( i < 100 )
{
    if ( i % 10 == 0 )
        printf("\n");

    n += array[i];
    printf("%d ", n);
    i++;
}
```