1. **[5 Points]** Write the outputs of the following modules

```c
int i;
for (i = 2; i < 20; i = i * i ){
    cout << i << endl;
    i = i + 2;
}
```

**OUTPUT:**

```
2
16
```

2. **[10 Points]** Consider the following recursive function and answer the following questions.

```c
void recursive(int x)
{
    static int y = 1;
    if (x < 0)
        cout << "Done" << endl;
    cout << x*y++ << endl;
    recursive(x--);
}
```

a. Write the outputs of the function call `recursive(a)` if `a = 5`:

**OUTPUT (a):**

```
5
10
15
. . (infinite)
```

b. Assume that the recursive call inside the function is changed to `recursive(--x)`;

What would be the output of the function call described in (a)

**OUTPUT (b):**

```
5
8
9
8
5
0
Done
```

3. **[10 Points]** Consider the following function

```c
void whadDidIDo(int &x, int *y)
{
    x = x * (*y);
    *y = x/ (*y);
    x = x/ (*y);
    return;
}
```

a. Assume `x1 = 10` and `y1 = 20`. Consider the following two function calls:

i. `whadDidIDo(x1, y1)`;  
   – is this function call correct? **YES[ ] NO[X]**

ii. `whadDidIDo(x1, &y1)`;  
    – is this function call correct? **YES[X] NO[ ]

b. If the function call(s) is correct, what are values of `x1` and `y1` after the function call (i) and/or (ii), which ever is the correct one?

Answer: Values are swapped

4. **[5 Points]** In the assignment expression, identify the **Lvalue** and **Rvalue** expressions and state whether the statement is valid and what it does:

```
*(xPtr + 3) = x[5] = a + y;
```

**Lvalues:**  

```
*(xPtr + 3), x[5]
```

**Rvalues only:**  

```
a + y
```

**What it does:** Stores value of `(a + y)` in array elements `x[3]` and `x[5].`