S2 Supplementary Exercise - Programming

1. Complete the sample outputs of the following program below:

Program

```
int x, n;

cout << "Enter n = ";
cin >> n;

x = 1;
while ( x <= n ){
   x = x*3;
   cout << x << ",";
}
```

Output 1
Enter n = 1

Output 2
Enter n = 30

2. Complete the sample outputs of the following program below:

Program

```
int i, a, b;
cout << "Enter i = ";
cin >> i;
a = 0;
b = 1;
while (b <= i)
{
      a = a + b;
      b = b + 1;
}
cout << a << endl;
```

Output 1
Enter i = 4

Output 2
Enter i = 15

3. Fill in the blanks of the following program to print all even numbers between a and b. You may assume that b is always larger than a and both a and b are positive integers. The sample output is given below for your reference.

Sample output

```
Enter a = 1
Enter b = 9
2,4,6,8,
```

Program

```
int a, b, x;

cout << "Enter a = ";

cin >> a;

cout << "Enter b = ";

cin >> b;

if(a%2==0)

    x = __(a)__;

else

    x = __(b)__;


while ( __(c)__ ){

    cout << x << ",";

    x = __(d)__;

}
```

4. Fill in the blanks of the following program to find the answer of 2^x. You may assume that x is always a positive integer. The sample output is given below for your reference.

Sample output

```
Enter x = 4
16
```

Program

```
int x, y, ans;

cout << "Enter x = ";

cin >> x;

ans = ___(a)___;

while ( ___(b)___ ){

    ans = ___(c)___;

      x = ___(d)___;

}

cout << ans << endl;
```

5. Complete the program to generate the sample output below:

Sample Output

```
Enter n = 5
0     1     2     3     4     5
0     1     2     3     4
0     1     2     3
0     1     2
0     1
0
```

Program

```
int x, y, n;

cout << "Enter n = ";

cin >> n;

x = 0;

while ( ___(a)___ ){

   y = 0;

   while( ___(b)___ ){

        cout << ___(c)___ << "\t";

        y = y + 1;

   }

   x = x + 1;

   cout << endl;

}
```