C++ Functions

Assignment Solutions

Q1 – Write a function to print squares of the first 5 natural numbers.

Sample Output: 1 4 9 16 25

Code:

```cpp
#include <iostream>
using namespace std;
int square(int num)
{
    int sq=num*num;
    return sq;
}
int main()
{
    for(int i=1;i<=5;i++)
    {
        cout<<square(i)<<" ";
    }
}
```

```cpp
 9  #include <iostream>
10  using namespace std;
11  int square(int num)
12 ▾ {
13          int sq=num*num;
14          return sq;
15  }
16  int main()
17 ▾ {
18          for(int i=1;i<=5;i++)
19 ▾      {
20              cout<<square(i)<<" ";
21          }
22  }
```

```
1 4 9 16 25

...Program finished with exit code 0
Press ENTER to exit console.
```

Q2 – Given radius of a circle. Write a function to print the area and circumference of the circle.

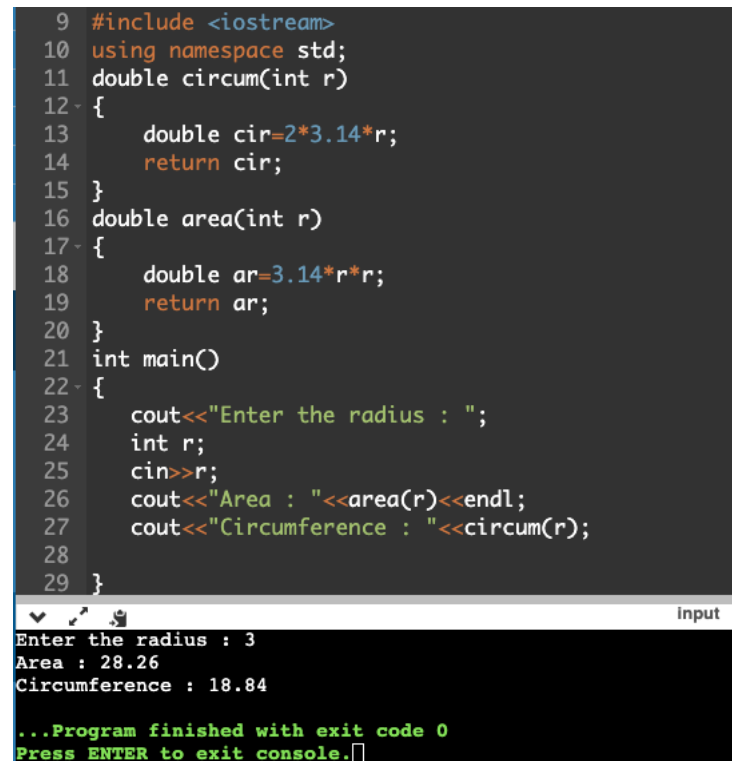Sample Input: r=3
Sample Output: Area : 28.26
                       Circumference : 18.84

Code:

```cpp
#include <iostream>
using namespace std;
double circum(int r)
{
    double cir=2*3.14*r;
    return cir;
}
double area(int r)
{
    double ar=3.14*r*r;
    return ar;
}
int main()
{
    cout<<"Enter the radius : ";
    int r;
    cin>>r;
    cout<<"Area : "<<area(r)<<endl;
    cout<<"Circumference : "<<circum(r);

}
```

```cpp
 9  #include <iostream>
10  using namespace std;
11  double circum(int r)
12  {
13      double cir=2*3.14*r;
14      return cir;
15  }
16  double area(int r)
17  {
18      double ar=3.14*r*r;
19      return ar;
20  }
21  int main()
22  {
23      cout<<"Enter the radius : ";
24      int r;
25      cin>>r;
26      cout<<"Area : "<<area(r)<<endl;
27      cout<<"Circumference : "<<circum(r);
28
29  }
```

input

```
Enter the radius : 3
Area : 28.26
Circumference : 18.84

...Program finished with exit code 0
Press ENTER to exit console.
```

Q3 – Given the age of a person, write a function to check if the person is eligible to vote or not.

Sample Input: 19
Sample Output: Yes
Sample Input: 17
Sample Output: No

Code:

```cpp
#include <iostream>
using namespace std;
bool vote(int age)
{
    if(age>=18)
    {
        return true;
    }
    return false;

}
int main()
{
    cout<<"Enter the age : ";
    int age;
    cin>>age;
    if(vote(age)==true)
    {
        cout<<"Yes";
    }else{
        cout<<"No";
    }


}
```

```cpp
9   #include <iostream>
10  using namespace std;
11  bool vote(int age)
12  {
13      if(age>=18)
14      {
15          return true;
16      }
17      return false;
18
19  }
20  int main()
21  {
22      cout<<"Enter the age : ";
23      int age;
24      cin>>age;
25      if(vote(age)==true)
26      {
27          cout<<"Yes";
28      }else{
29          cout<<"No";
30      }
31
32
33  }
```

```
Enter the age : 19
Yes

...Program finished with exit code 0
Press ENTER to exit console.
```
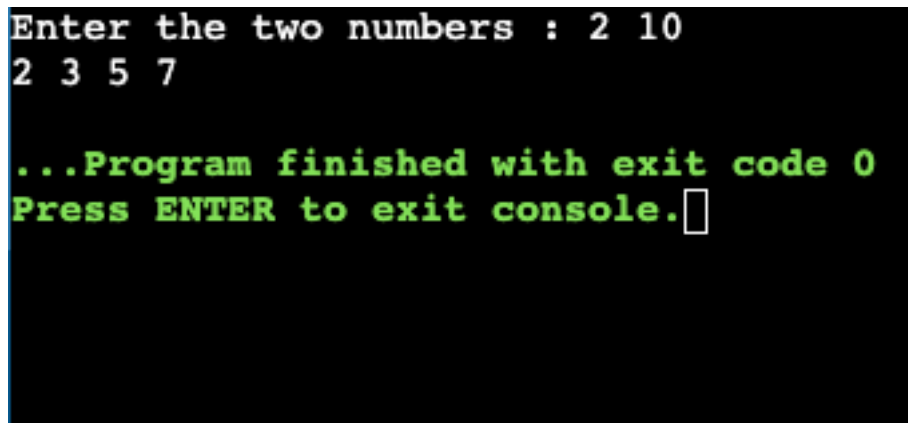
Q4 - Given two numbers a and b, write a program using functions to print all the odd numbers between them.

Sample Input: 1 10
Sample Output: 1 3 5 7 9

Code:
```cpp
#include <iostream>
using namespace std;
bool prime(int num)
{
    for(int i=2;i<num;i++)
    {
        if(num%i==0)
        {
            return false;
        }
    }
    return true;
}
int main()
{
    int a;
    int b;
    cout<<"Enter the two numbers : ";
    cin>>a>>b;
    for(int i=a;i<=b;i++)
    {
        if(prime(i)){
            cout<<i<<" ";
        }
    }
}
```

```
Enter the two numbers : 2 10
2 3 5 7

...Program finished with exit code 0
Press ENTER to exit console.
```

Q5 - Given two numbers a and b, write a program to print all the prime numbers present between a and b.

Sample Input: 2 10

Sample Output: 2 3 5 7

Code:

```cpp
#include <iostream>
using namespace std;
bool odd(int num)
{
    if(num%2!=0)
    {
        return true;
    }
    return false;
}
int main()
{
    int a;
    int b;
    cout<<"Enter the two numbers : ";
    cin>>a>>b;
    for(int i=a;i<=b;i++)
    {
        if(odd(i))
        {
            cout<<i<<" ";
        }
    }
}
```

```cpp
9   #include <iostream>
10  using namespace std;
11  bool odd(int num)
12  {
13      if(num%2!=0)
14      {
15          return true;
16      }
17      return false;
18  }
19  int main()
20  {
21      int a;
22      int b;
23      cout<<"Enter the two numbers : ";
24      cin>>a>>b;
25      for(int i=a;i<=b;i++)
26      {
27          if(odd(i))
28          {
29              cout<<i<<" ";
30          }
31      }
32  }
```

```
Enter the two numbers : 1 10
1 3 5 7 9

...Program finished with exit code 0
Press ENTER to exit console.
```