

1.

```
/*Program to get sum of two numbers*/
```

```
class sum1
```

```
{
```

```
    public static void main(String arg[])
```

```
    {
```

```
        int a,b,sum;
```

```
        a=Integer.parseInt(arg[0]);
```

```
        b=Integer.parseInt(arg[1]);
```

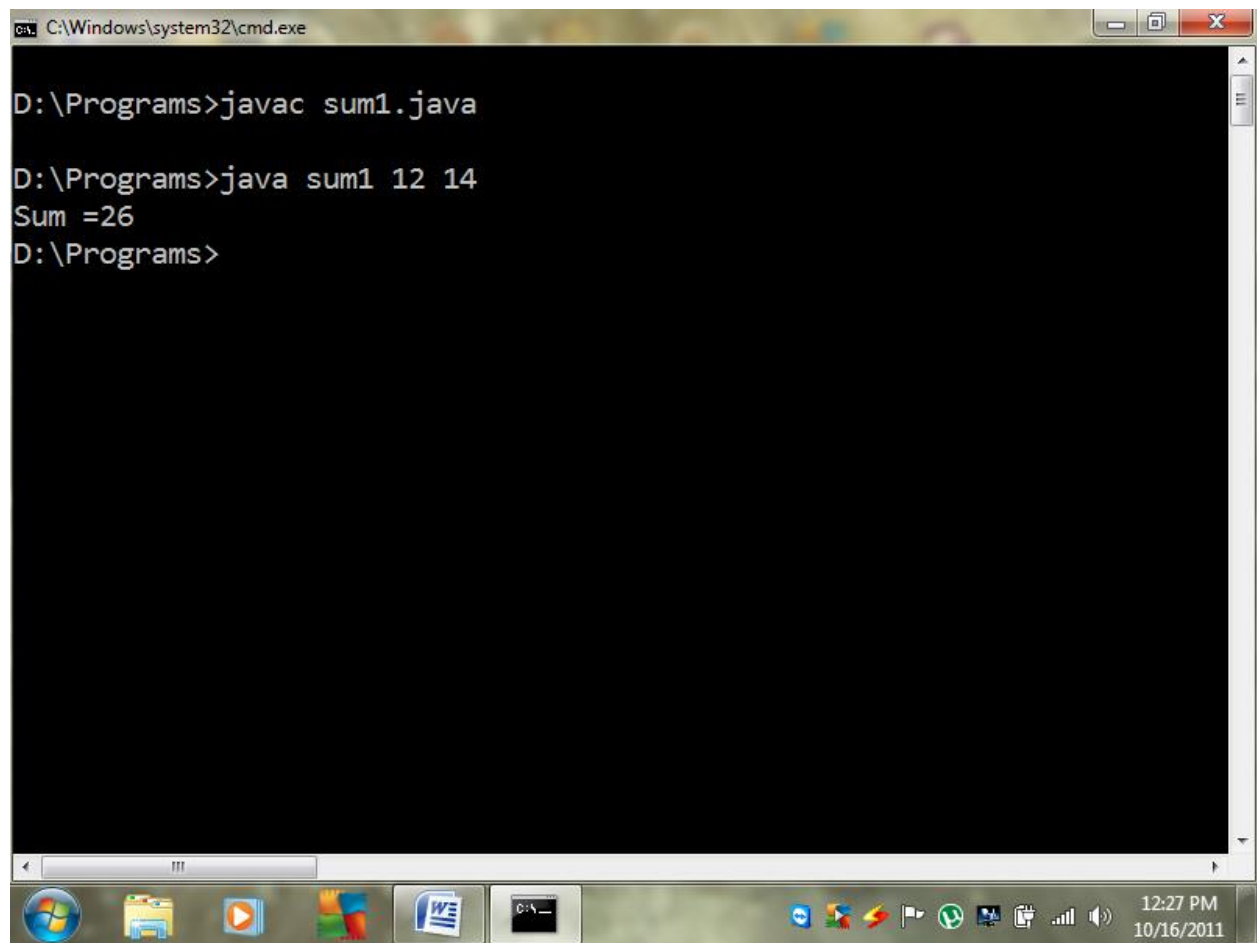
```
        sum=a+b;
```

```
        System.out.print("Sum =" +sum);
```

```
    }
```

```
}
```

Output:-



```
C:\Windows\system32\cmd.exe

D:\Programs>javac sum1.java

D:\Programs>java sum1 12 14
Sum =26
D:\Programs>
```

The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background with white text. The user has entered the command `javac sum1.java` to compile the Java file. Then, they entered `java sum1 12 14` to run the program with arguments 12 and 14. The program output is `Sum =26`. The command prompt is currently at the `D:\Programs>` prompt. The Windows taskbar is visible at the bottom, showing various icons and the system clock indicating 12:27 PM on 10/16/2011.

2.

```
/*Program to convert fahrenheit temperature to celsius temperature*/
```

```
class convert
```

```
{
```

```
    public static void main(String arg[])
```

```
    {
```

```
        float fahrenheit,celsius;
```

```
        fahrenheit=Float.parseFloat(arg[0]);
```

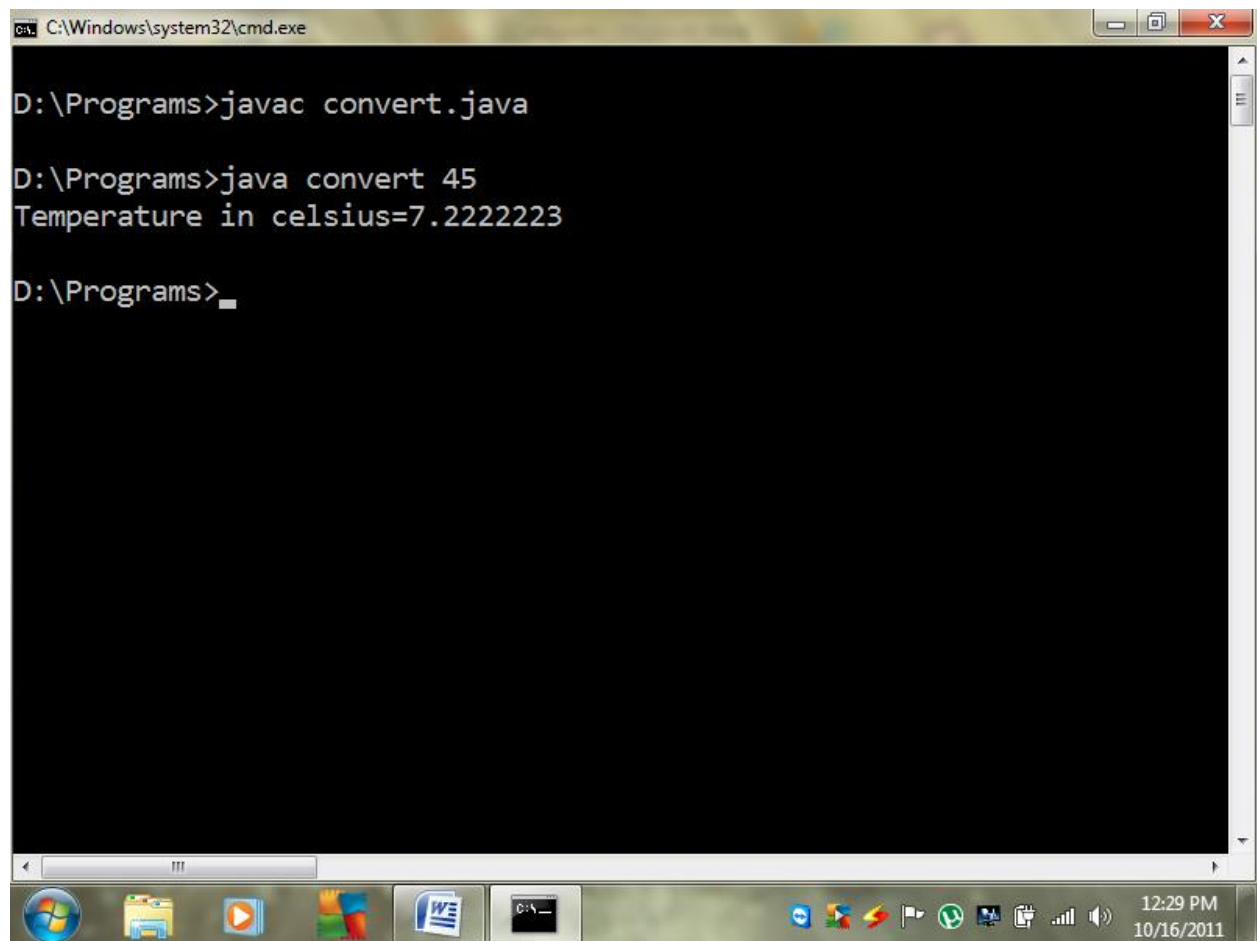
```
        celsius=(((fahrenheit-32)/9)*5);
```

```
        System.out.println("Temperature in celsius="+celsius);
```

```
    }
```

```
}
```

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac convert.java  
  
D:\Programs>java convert 45  
Temperature in celsius=7.2222223  
  
D:\Programs>_
```

The window has a standard Windows taskbar at the bottom with various icons, including the Start button, Internet Explorer, and several application icons. The system clock in the bottom right corner shows "12:29 PM" and "10/16/2011".

3.

```
/*Program to find square root of a number*/
```

```
import java.lang.Math;
```

```
class squareroot
```

```
{
```

```
    public static void main(String arg[])
```

```
    {
```

```
        double squareroot,number;
```

```
        number=Float.parseFloat(arg[0]);
```

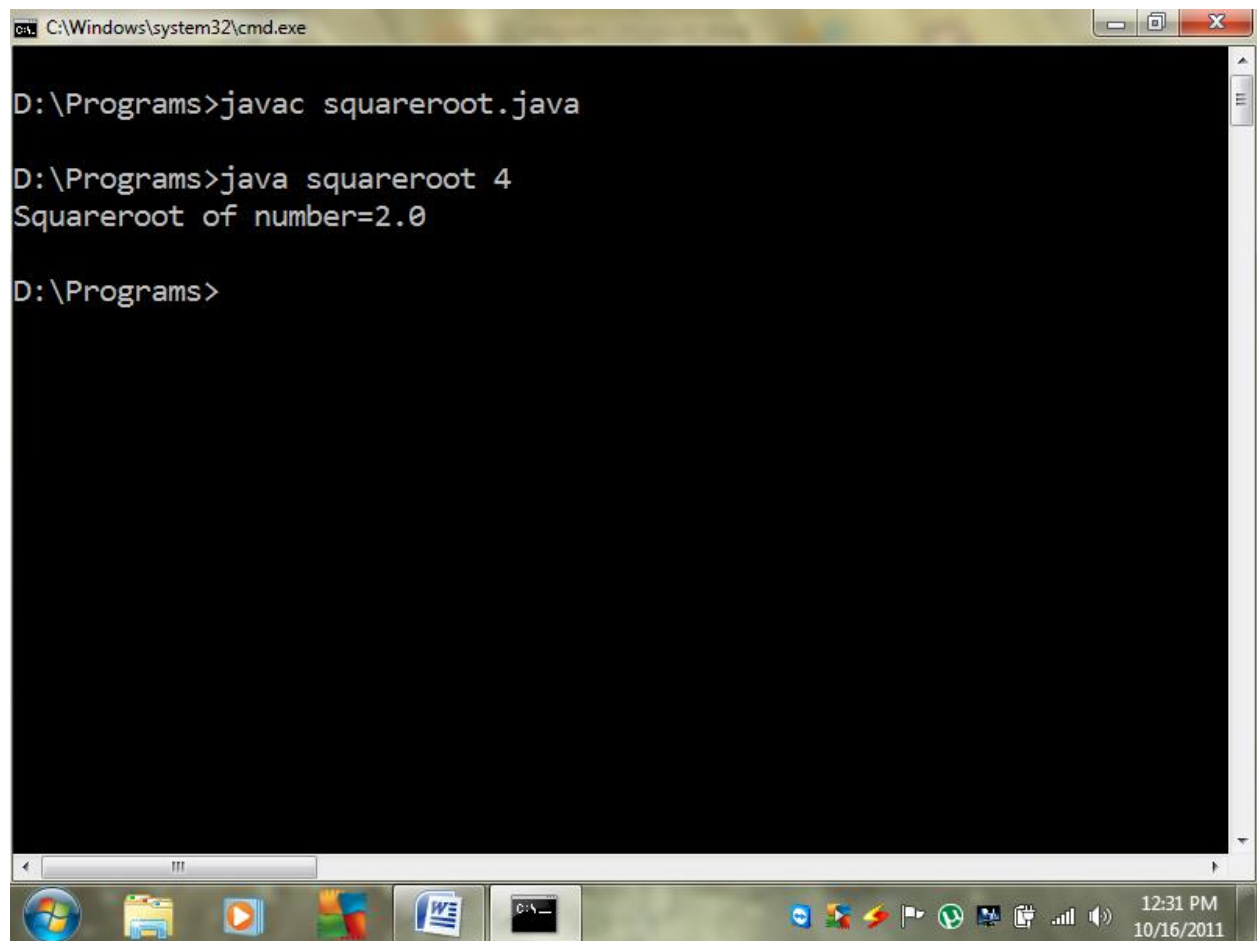
```
        squareroot=Math.sqrt(number);
```

```
        System.out.println("Squareroot of number="+squareroot);
```

```
    }
```

```
}
```

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac squareroot.java  
  
D:\Programs>java squareroot 4  
Squareroot of number=2.0  
  
D:\Programs>
```

The window has a standard Windows taskbar at the bottom with various icons, including the Start button, Internet Explorer, and several application icons. The system clock in the bottom right corner shows "12:31 PM" and "10/16/2011".

4.

/*Program to get sum of series numbers $1+1/2+....+1/10$ */

class ssum1

{

 public static void main(String arg[])

 {

 float sum=0,temp;

 for(float i=1;i<=10;i++)

 {

 temp=1/i;

 sum=sum+temp;

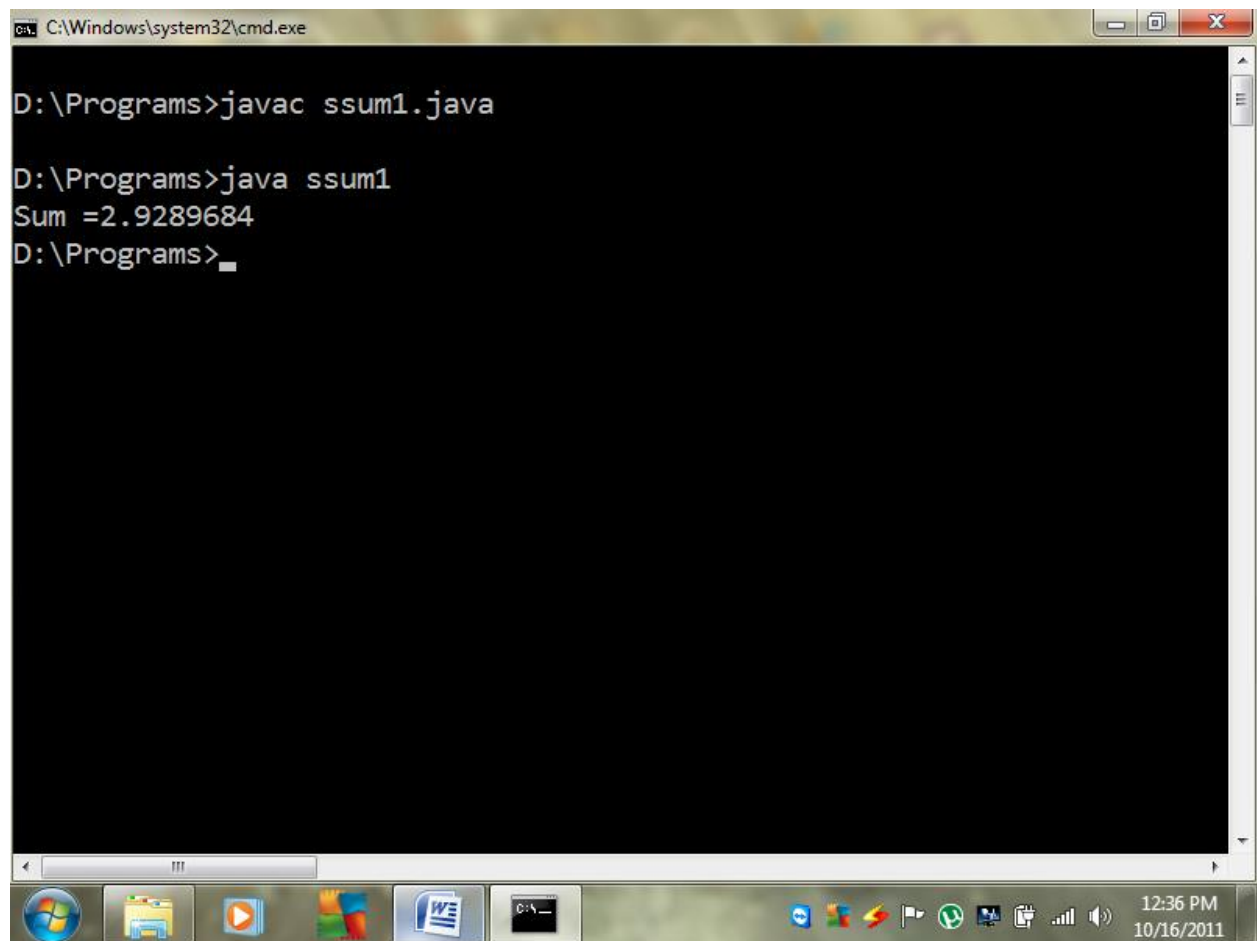
 }

 System.out.print("Sum =" +sum);

 }

}

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac ssum1.java  
  
D:\Programs>java ssum1  
Sum =2.9289684  
D:\Programs>_
```

The window has a standard Windows taskbar at the bottom. On the left, there are icons for the Start button, My Computer, Recycle Bin, and several open applications including a web browser, a media player, and a document. On the right, the system tray shows the time as 12:36 PM and the date as 10/16/2011, along with various system icons like network, volume, and power.

5.

/*Program of that implements the basic functionality of a calculator*/

import java.io.DataInputStream;

class basiccal

{

public static void main(String arg[])throws Exception

{

int opr;

float a,b,result=0,right=1;

DataInputStream in=new DataInputStream(System.in);

System.out.println("Enter to number");

a=Float.parseFloat(in.readLine());

b=Float.parseFloat(in.readLine());

System.out.println("Enter your choice");

System.out.println("1 . for addition");

System.out.println("2 . for subtraction");

System.out.println("3 . for division");

System.out.println("4 . for multiplication");

opr=Integer.parseInt(in.readLine());

switch(opr)

{

case 1:

result=a+b;

break;

case 2:

```
        result=a-b;

        break;

    case 3:

        result=a/b;

        break;

    case 4:

        result=a*b;

        break;

    default:

        System.out.println("No this type of selection available");

        right=0;

        break;

    }

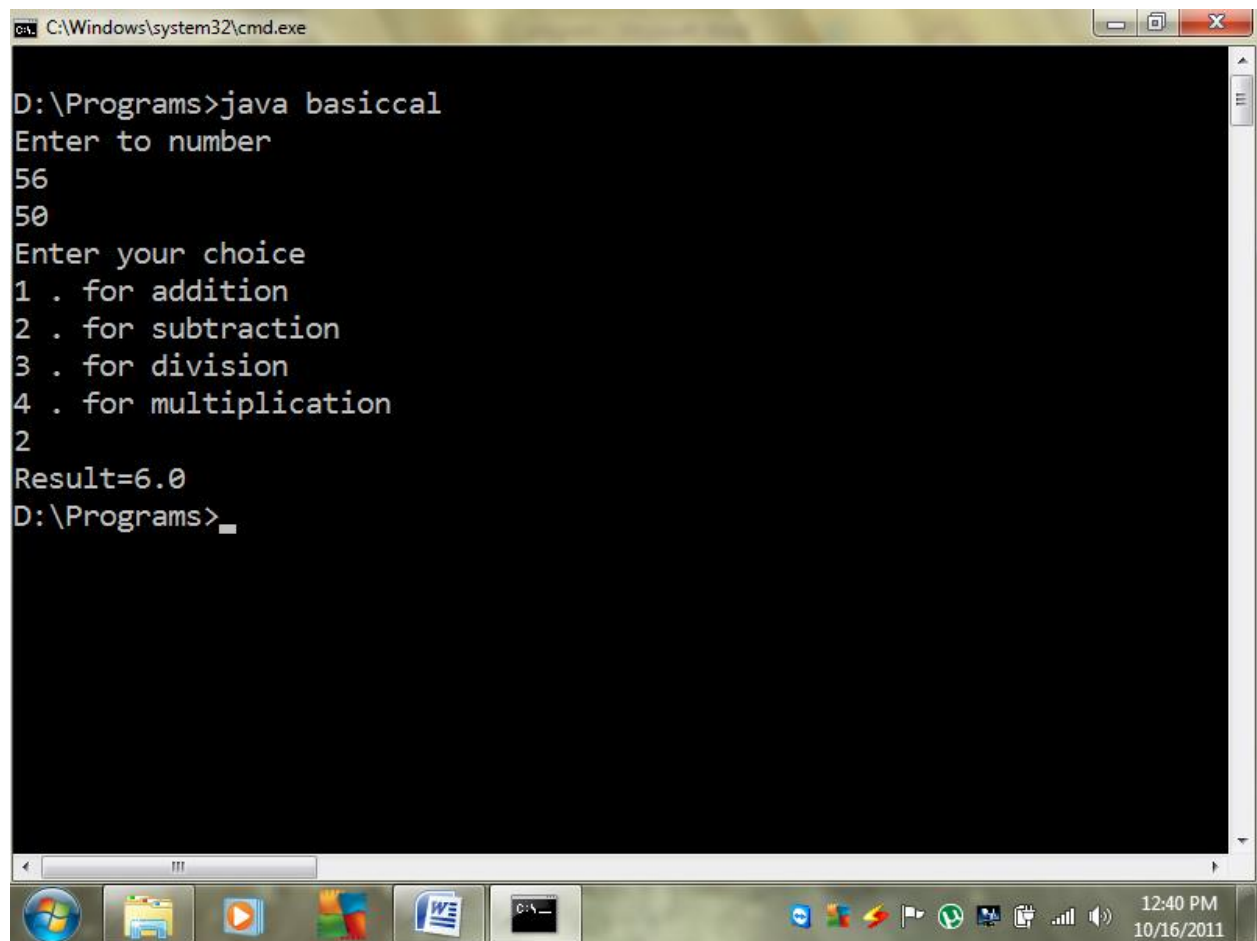
    if(right==1);

        System.out.print("Result="+result);

    }

}
```

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of text: "D:\Programs>java basiccal", "Enter to number", "56", "50", "Enter your choice", a list of options "1 . for addition", "2 . for subtraction", "3 . for division", "4 . for multiplication", the input "2", the output "Result=6.0", and the prompt "D:\Programs>". The window has a standard Windows taskbar at the bottom with various icons and a system clock showing "12:40 PM 10/16/2011".

```
C:\Windows\system32\cmd.exe

D:\Programs>java basiccal
Enter to number
56
50
Enter your choice
1 . for addition
2 . for subtraction
3 . for division
4 . for multiplication
2
Result=6.0
D:\Programs>
```

6.

/*Program to find that the reverse of a number */

class reverse

{

 public static void main(String arg[])

 {

 int num,temp,rem,q=0,rev=0;

 num=Integer.parseInt(arg[0]);

 temp=num;

 while(temp!=0)

 {

 rem=temp%10;

 temp=temp/10;

 rev=rev*10+rem;

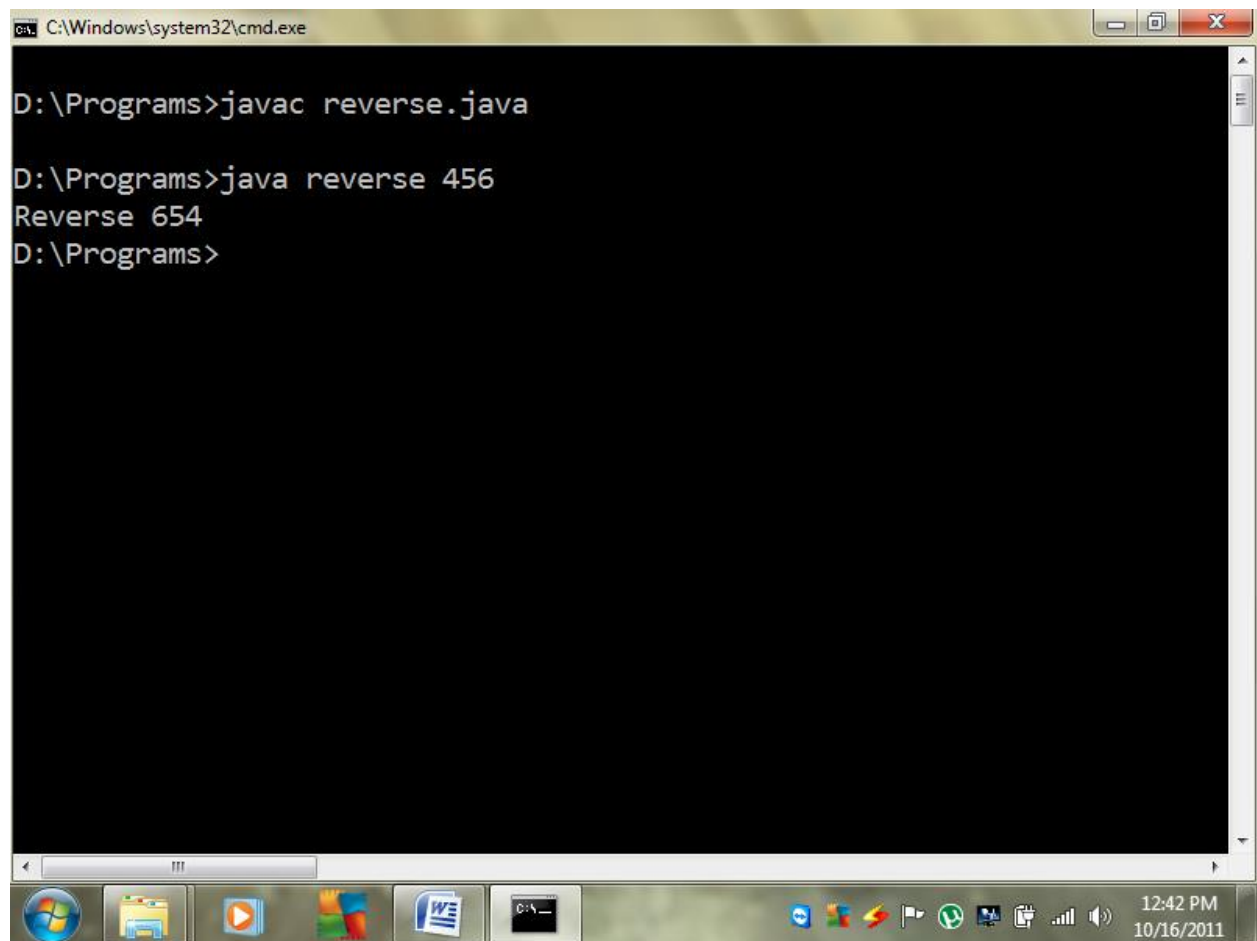
 }

 System.out.print("Reverse "+rev);

 }

}

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac reverse.java  
  
D:\Programs>java reverse 456  
Reverse 654  
D:\Programs>
```

The window has a standard Windows taskbar at the bottom with various icons, including the Start button, Internet Explorer, and several application icons. The system clock in the bottom right corner displays "12:42 PM" and "10/16/2011".

7.

/*Program to print the following number series

1

1 1

1 0 1

1 0 0 1

1 0 0 0 1

*/

class numstr

{

public static void main(String arg[])

{

int i,j;

for(i=1;i<=5;i++)

{

for(j=1;j<=i;j++)

{

if((j==1) || (j==i))

System.out.print(1+" ");

if((j!=1)&&(j!=i))

System.out.print(0+" ");

}

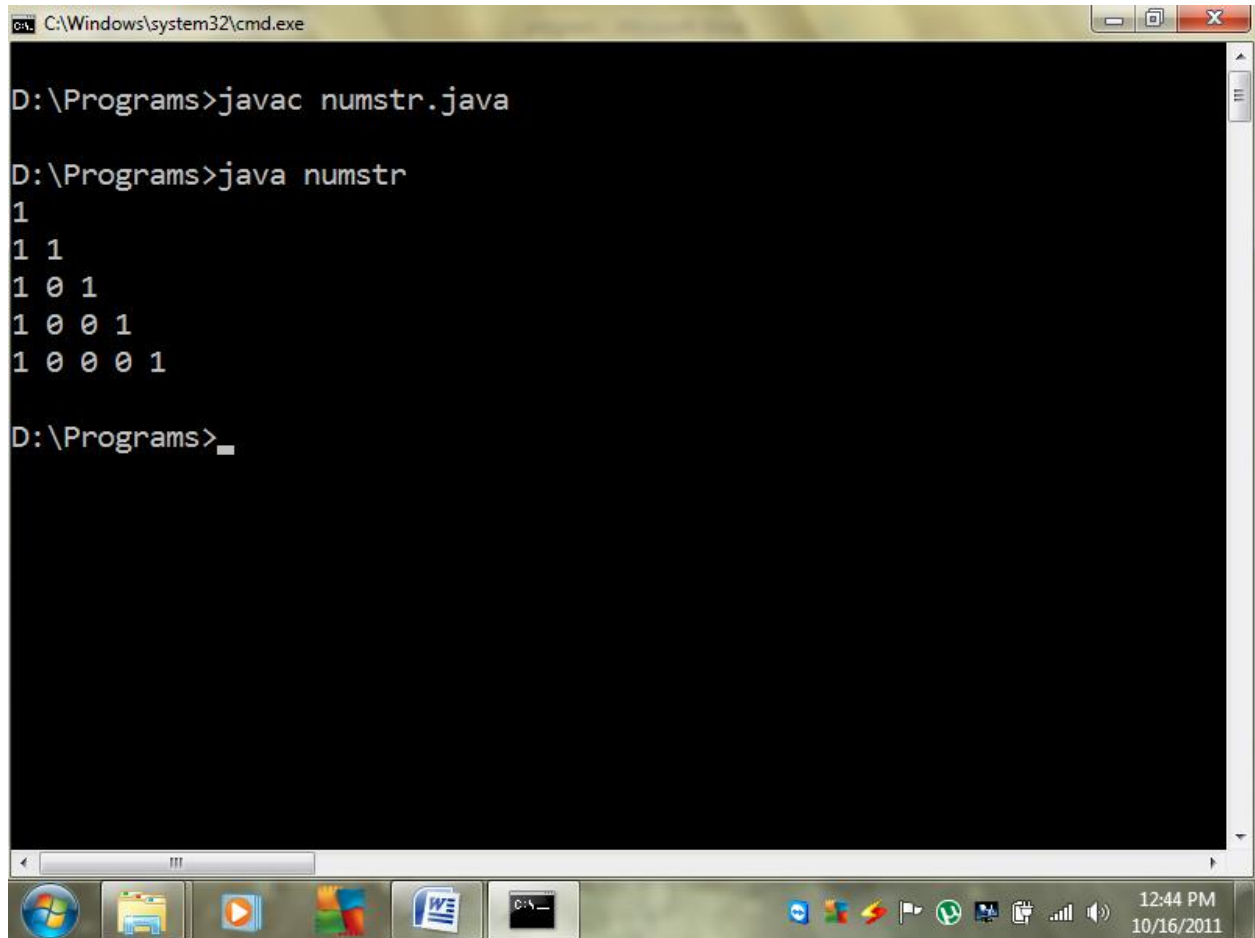
System.out.println();

}

}

}

Output:-



A screenshot of a Windows command prompt window. The title bar reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac numstr.java  
  
D:\Programs>java numstr  
1  
1 1  
1 0 1  
1 0 0 1  
1 0 0 0 1  
  
D:\Programs>_
```

The output displays a Pascal's triangle of 1s and 0s. The taskbar at the bottom shows various icons including the Start button, Internet Explorer, a folder, a media player, a game, a document, and a terminal window. The system clock in the bottom right corner indicates the time is 12:44 PM on 10/16/2011.

8.

/*Program to print the following number series

1

0 1

1 0 1

0 1 0 1

*/

class numstr2

{

public static void main(String arg[])

{

int i,j;

for(i=1;i<=4;i++)

{

for(j=1;j<=i;j++)

{

if(i%2!=0)

{

if((j==1) || (j==i))

System.out.print(1+" ");

else

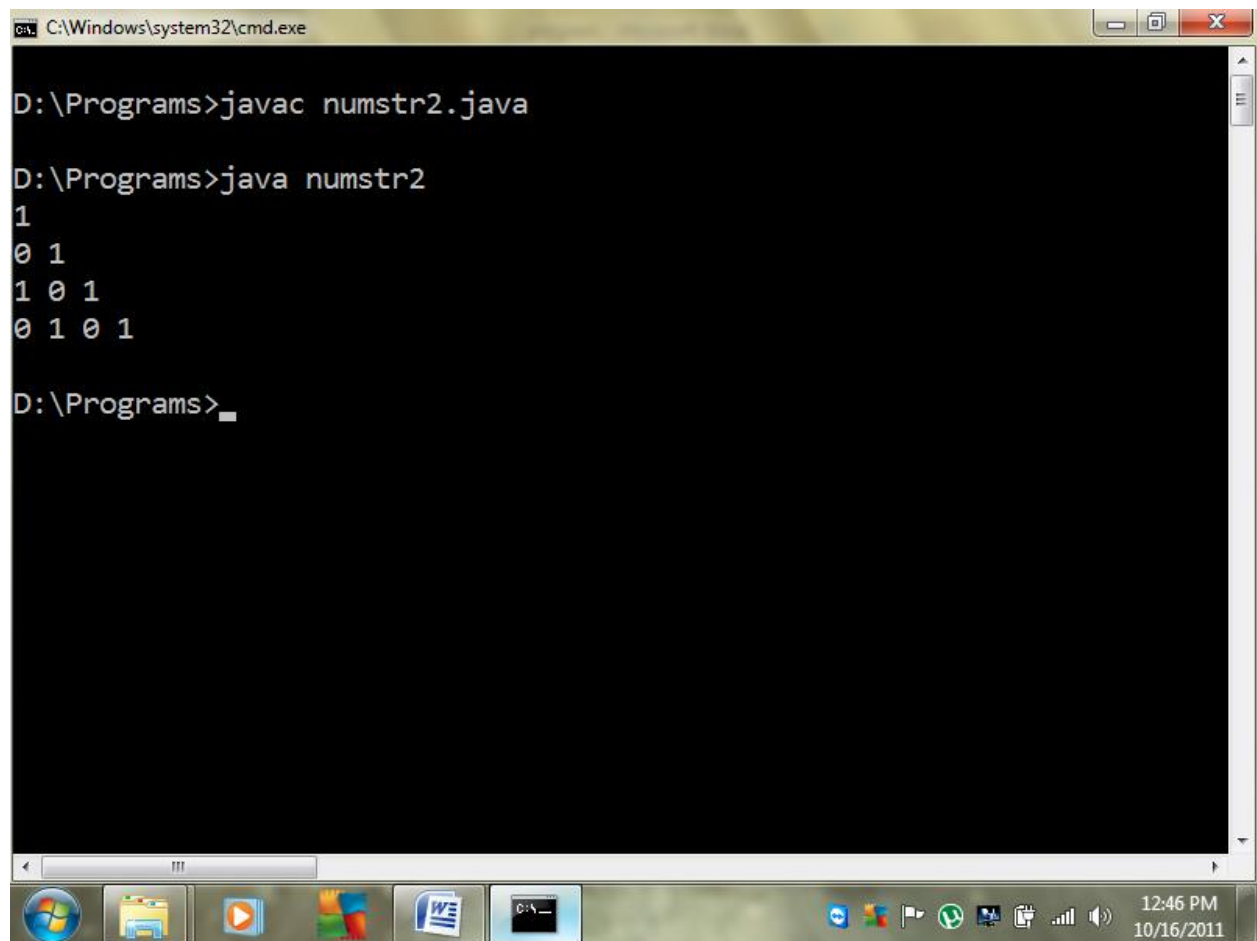
System.out.print(0+" ");

}

if(i%2==0)


```
        {  
            if(j%2==0)  
                System.out.print(1+" ");  
            else  
                System.out.print(0+" ");  
        }  
        System.out.println();  
    }  
}
```

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac numstr2.java

D:\Programs>java numstr2
1
0 1
1 0 1
0 1 0 1

D:\Programs>
```

The output consists of four lines of space-separated binary digits (0s and 1s), representing the binary representations of the numbers 1, 2, 3, and 4 respectively. The taskbar at the bottom shows various icons, including the Start button, Internet Explorer, and several open applications. The system clock in the bottom right corner indicates the time is 12:46 PM on 10/16/2011.

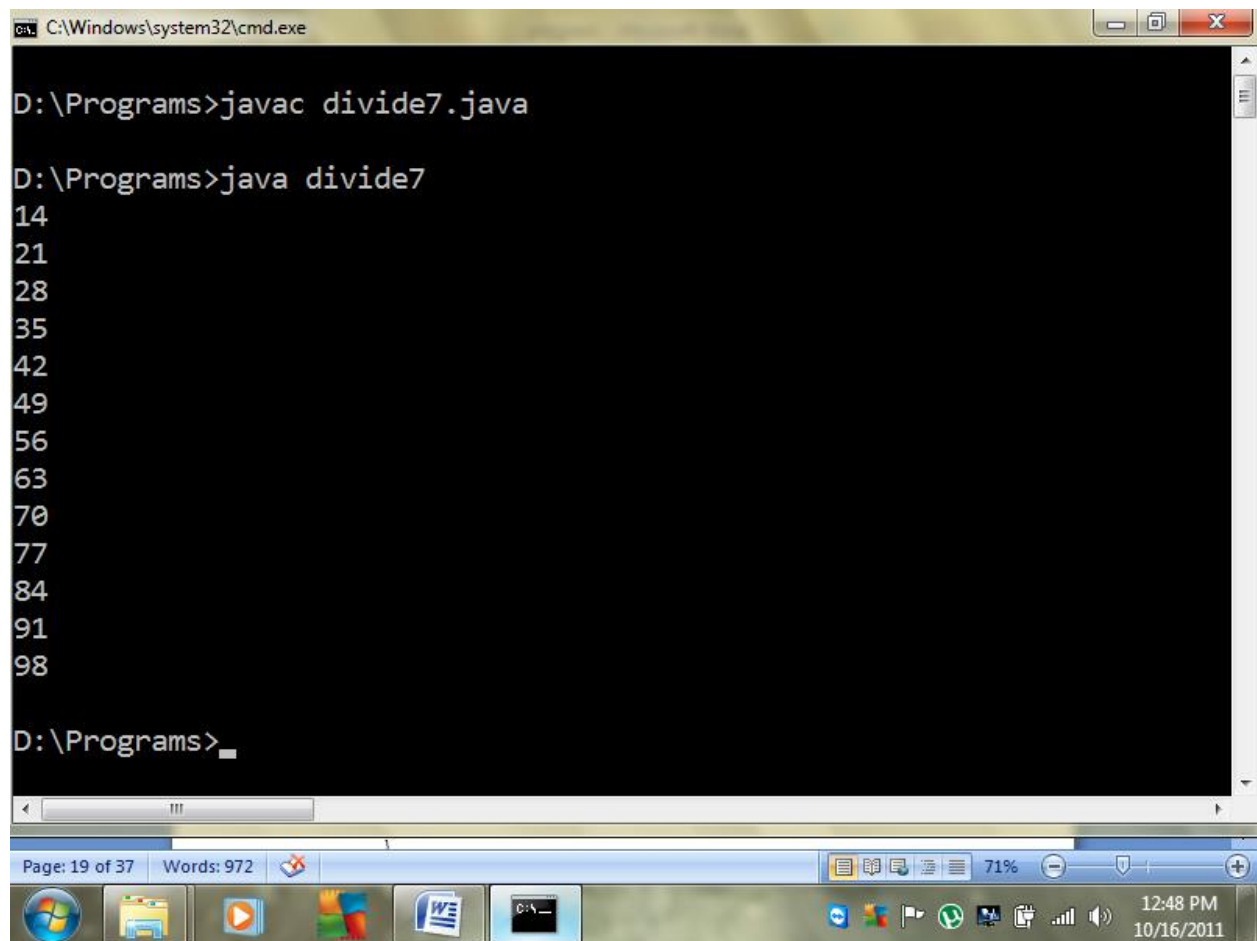
9.

/*Program to print numbers divisible by 7 in between 10 and 100 */

class divide7

```
{  
    public static void main(String arg[])  
    {  
        int i,rem;  
        for(i=10;i<=100;i++)  
        {  
            rem=i%7;  
            if(rem==0)  
                System.out.println(i);  
            else  
                continue;  
        }  
    }  
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The user is in the directory "D:\Programs". They have compiled a Java file named "divide7.java" using the command "javac divide7.java". Then, they have executed the compiled file using the command "java divide7". The output of the program is a list of numbers: 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, and 98. The command prompt is currently at the "D:\Programs>" prompt.

```
C:\Windows\system32\cmd.exe

D:\Programs>javac divide7.java

D:\Programs>java divide7
14
21
28
35
42
49
56
63
70
77
84
91
98

D:\Programs>
```

Page: 19 of 37 Words: 972 71% 12:48 PM 10/16/2011

10.

/*Program to print following pattern

```
  *
 * *
* * * *
 * * *
  * *
    *
```

*/

class numstr3

{

public static void main(String arg[])

{

int i,j,k;

for(i=1;i<=4;i++)

{

for(j=4;j>i;j--)

System.out.print(" ");

for(k=1;k<=i;k++)

System.out.print("* ");

System.out.println();

}

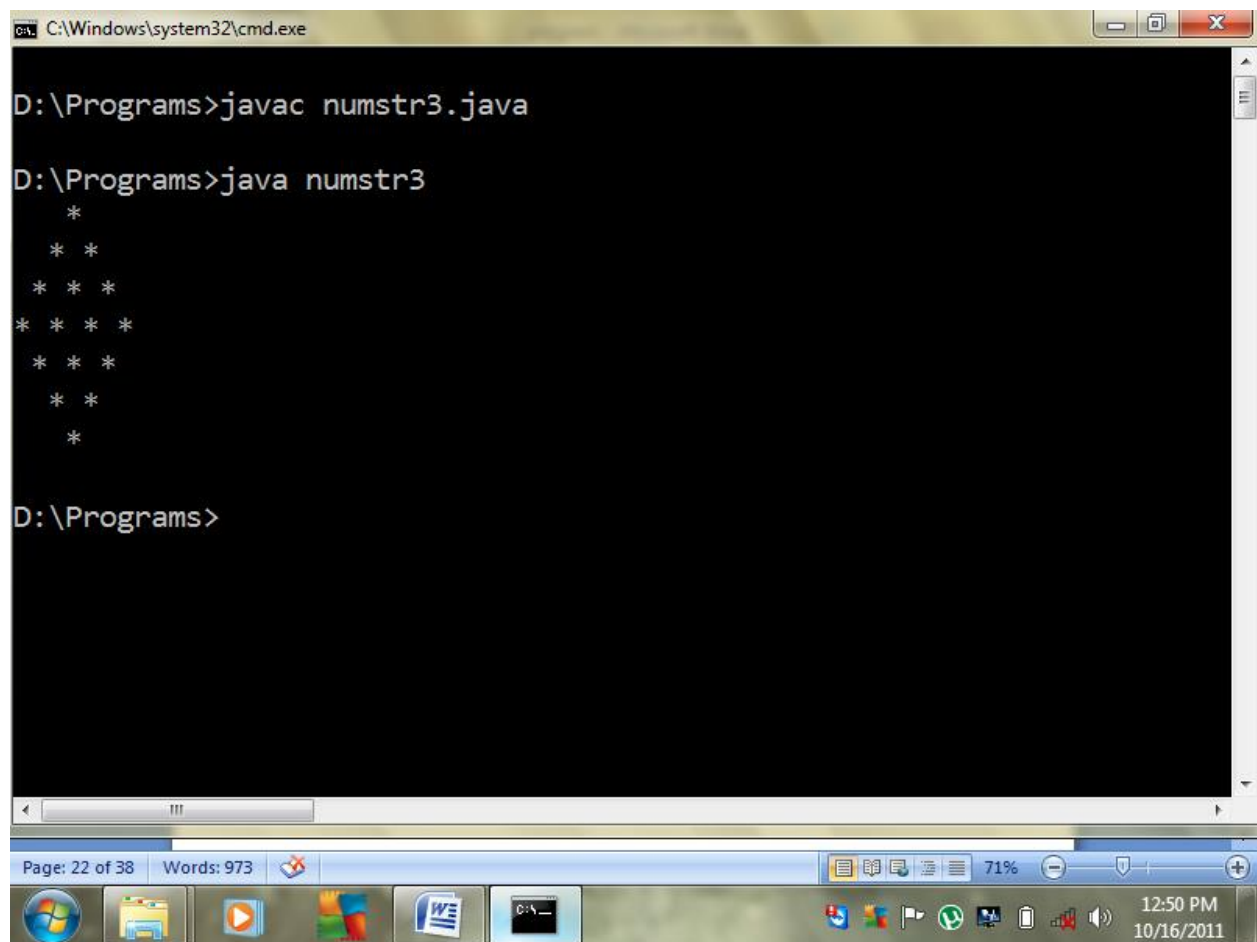
for(i=3;i>=1;i--)

{

for(j=i;j<4;j++)

```
        System.out.print(" ");  
        for(k=1;k<=i;k++)  
            System.out.print("* ");  
        System.out.println();  
    }  
}
```

Output:-



```
C:\Windows\system32\cmd.exe  
D:\Programs>javac numstr3.java  
D:\Programs>java numstr3  
 *  
* *  
* * *  
* * * *  
* * *  
* *  
*  
  
D:\Programs>
```

11.

/*Program to check a number is amstrong or not*/

class amstrong

{

 public static void main(String arg[])

 {

 int num,temp,rem,q=0 ;

 num=Integer.parseInt(arg[0]);

 temp=num;

 while(temp!=0)

 {

 rem=temp%10;

 q=(q+(rem*rem*rem));

 temp=temp/10;

 }

 if(q==num)

 System.out.print("Number is amstrong ");

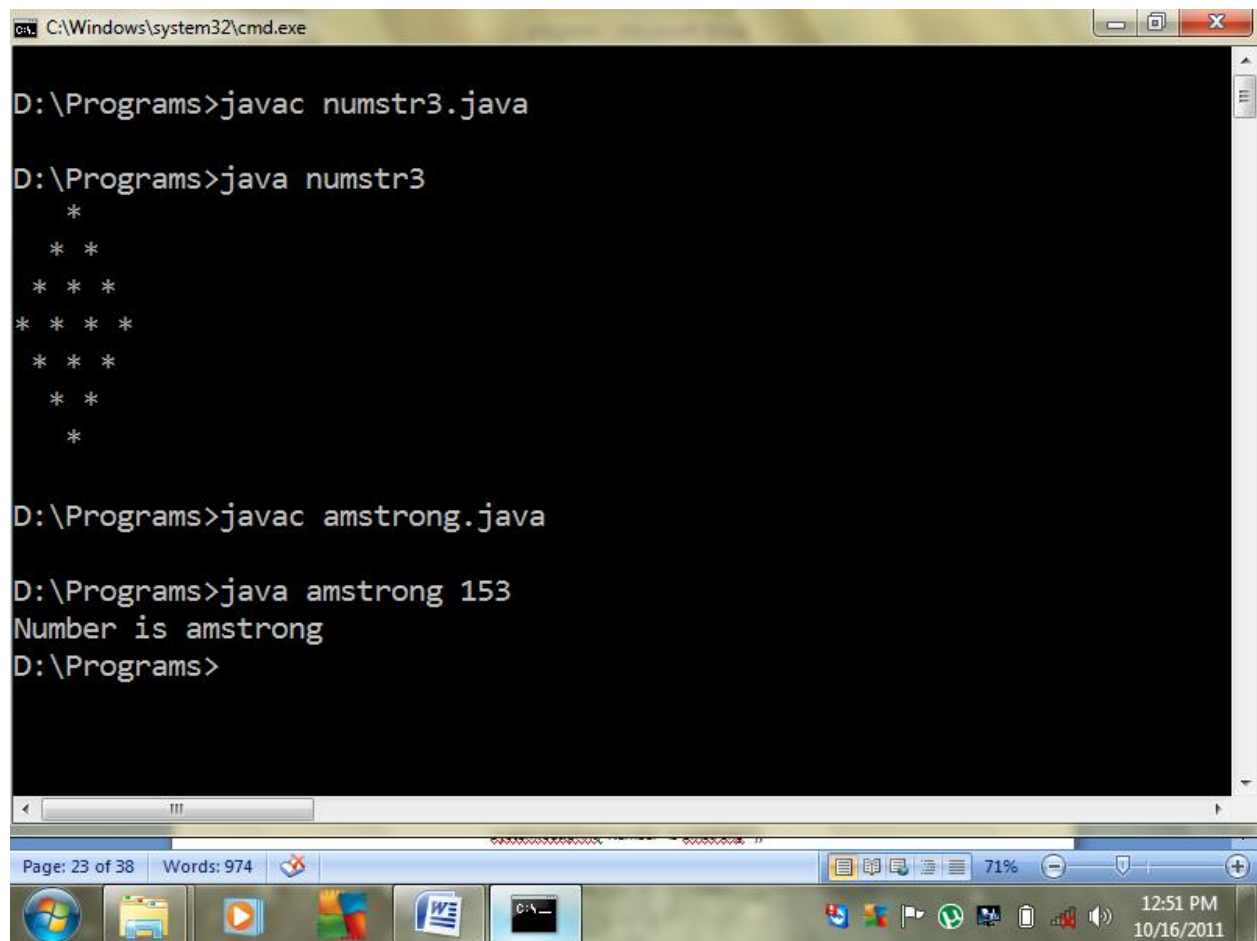
 else

 System.out.print("Number is not amstrong");

 }

}

Output:-



```
C:\Windows\system32\cmd.exe

D:\Programs>javac numstr3.java

D:\Programs>java numstr3
  *
 * *
* * *
* * * *
 * * *
  * *
   *

D:\Programs>javac amstrong.java

D:\Programs>java amstrong 153
Number is amstrong
D:\Programs>
```

The screenshot shows a Windows 7 desktop environment. At the top, a command prompt window titled 'C:\Windows\system32\cmd.exe' is open. The user has navigated to 'D:\Programs' and executed the following commands:
1. `javac numstr3.java`
2. `java numstr3`
The output of the second command is a pattern of asterisks:
 *
 * *
* * *
* * * *
 * * *
 * *
 *
Below this, the user has executed:
3. `javac amstrong.java`
4. `java amstrong 153`
The output of the fourth command is 'Number is amstrong'.
The command prompt window is positioned above a taskbar. The taskbar shows several icons: Start button, folder, media player, Windows logo, Word document, and command prompt. The system tray on the right shows the date and time as '12:51 PM 10/16/2011'.

12.

/*Program to check whether a number is palindrome or not*/

class palindrome

{

 public static void main(String arg[])

 {

 int num,temp,rev=0,rem;

 num=Integer.parseInt(arg[0]);

 temp=num;

 while(temp!=0)

 {

 rem=temp%10;

 rev=rev*10;

 rev=rev+rem;

 temp=temp/10;

 }

 if(rev==num)

 System.out.print("Number is palindrome");

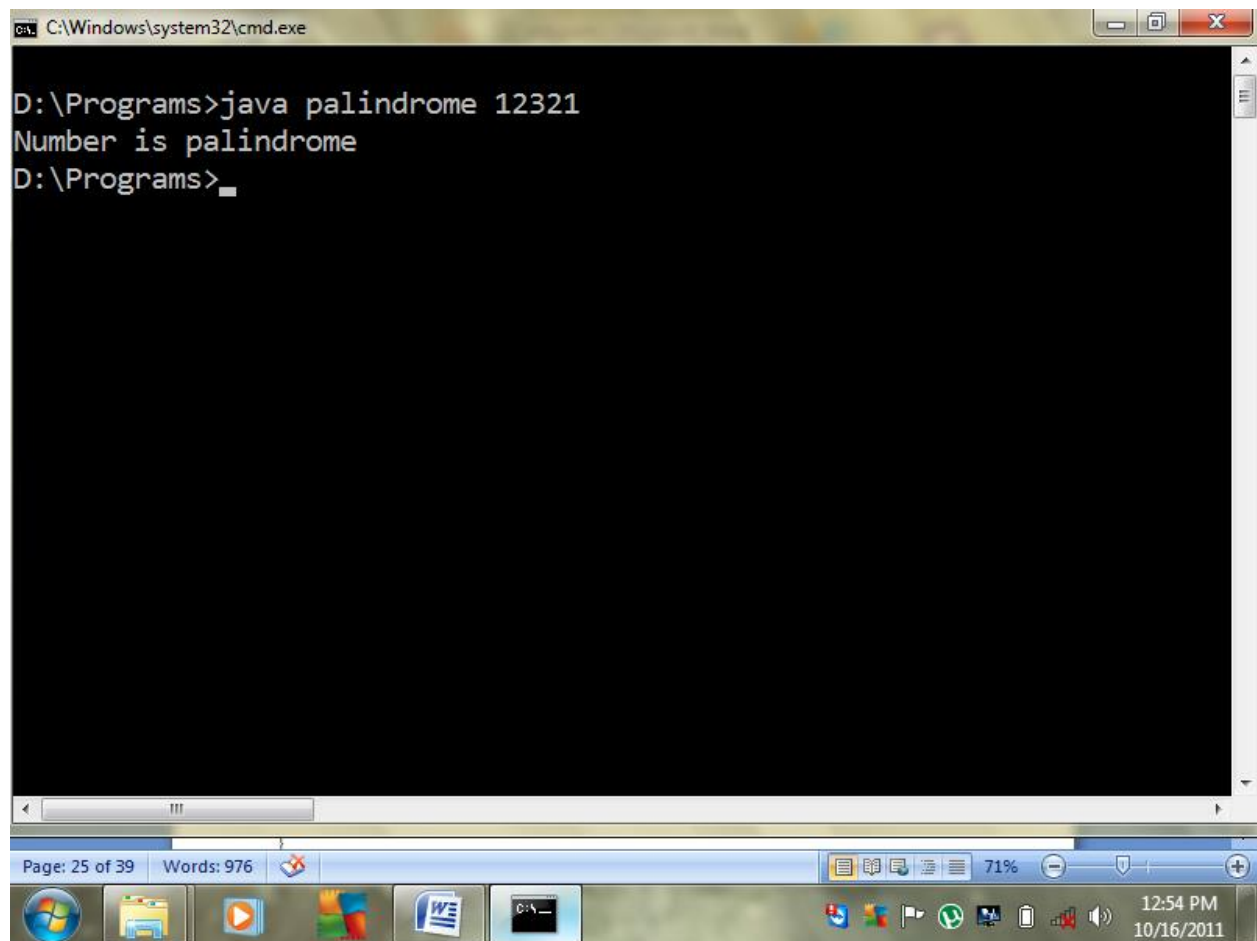
 else

 System.out.print("Number is not palindrome");

 }

}

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following text:

```
D:\Programs>java palindrome 12321  
Number is palindrome  
D:\Programs>_
```

The window is open over a document titled "Page: 25 of 39" with "Words: 976". The taskbar at the bottom shows several icons, including the Start button, a folder, a media player, a game, a Word document, and the command prompt itself. The system clock in the bottom right corner displays "12:54 PM" and "10/16/2011".

14.

/*Program to print table of a number from 1 to 10 using array*/

class table

{

 public static void main(String arg[])

 {

 int i,num,temp=0;

 int table[]=new int[10];

 num=Integer.parseInt(arg[0]);

 for(i=1;i<=10;i++)

 {

 temp=i*num;

 table[i-1]=temp;

 }

 for(i=0;i<10;i++)

 {

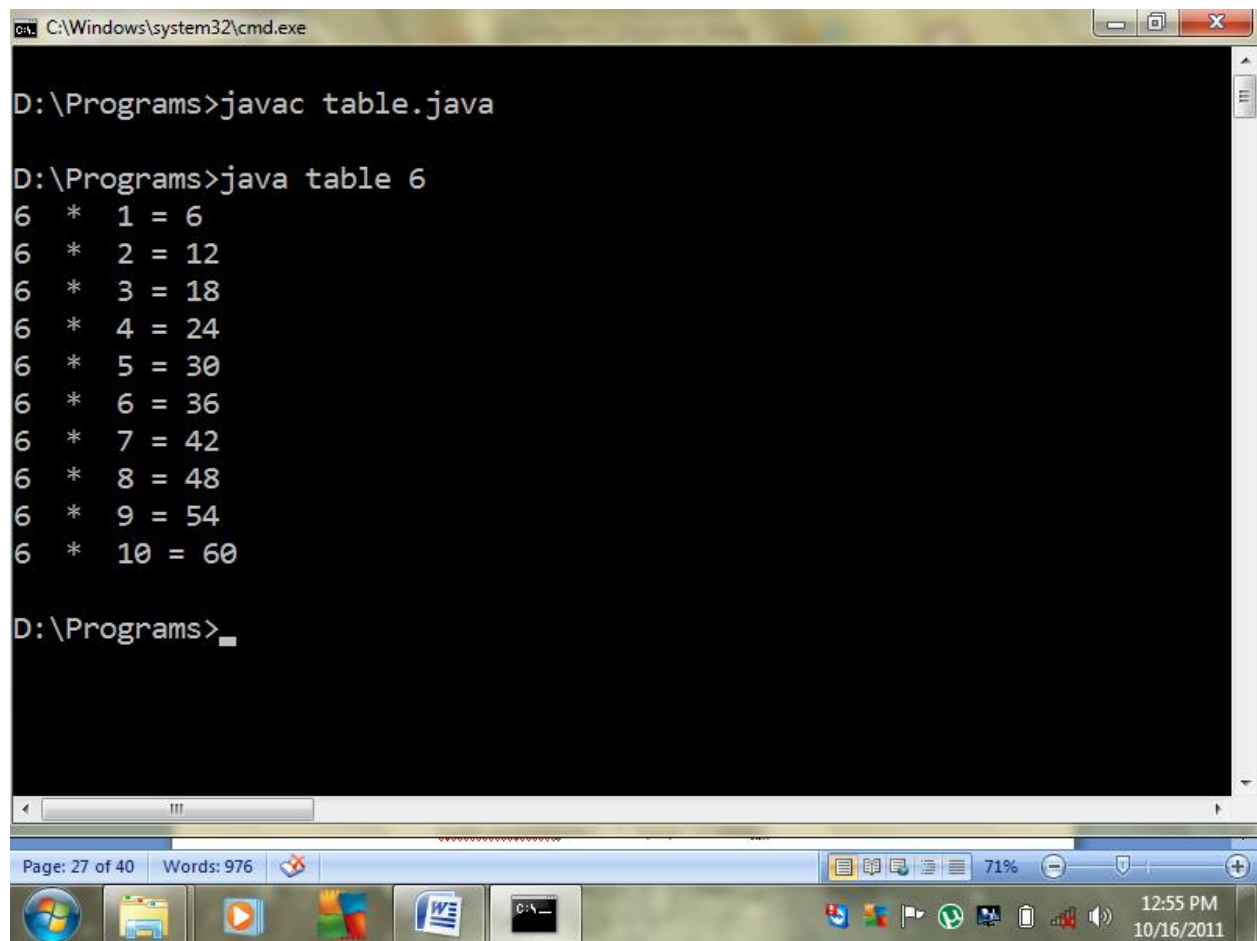
 System.out.println(num+" * "+(i+1)+" = "+table[i]);

 }

 }

}

Output:-



```
C:\Windows\system32\cmd.exe

D:\Programs>javac table.java

D:\Programs>java table 6
6 * 1 = 6
6 * 2 = 12
6 * 3 = 18
6 * 4 = 24
6 * 5 = 30
6 * 6 = 36
6 * 7 = 42
6 * 8 = 48
6 * 9 = 54
6 * 10 = 60

D:\Programs>
```

Page: 27 of 40 Words: 976 71% 12:55 PM 10/16/2011

15.

/*Program to check that a number is prime or not*/

class prime

{

public static void main(String arg[])

{

int num,i,rem,result=0;

num=Integer.parseInt(arg[0]);

for(i=2;i!=num;i++)

{

rem=num%i;

if(rem==0)

{

result=1;

break;

}

else

continue;

}

if(result==1)

System.out.print("Number is not prime");

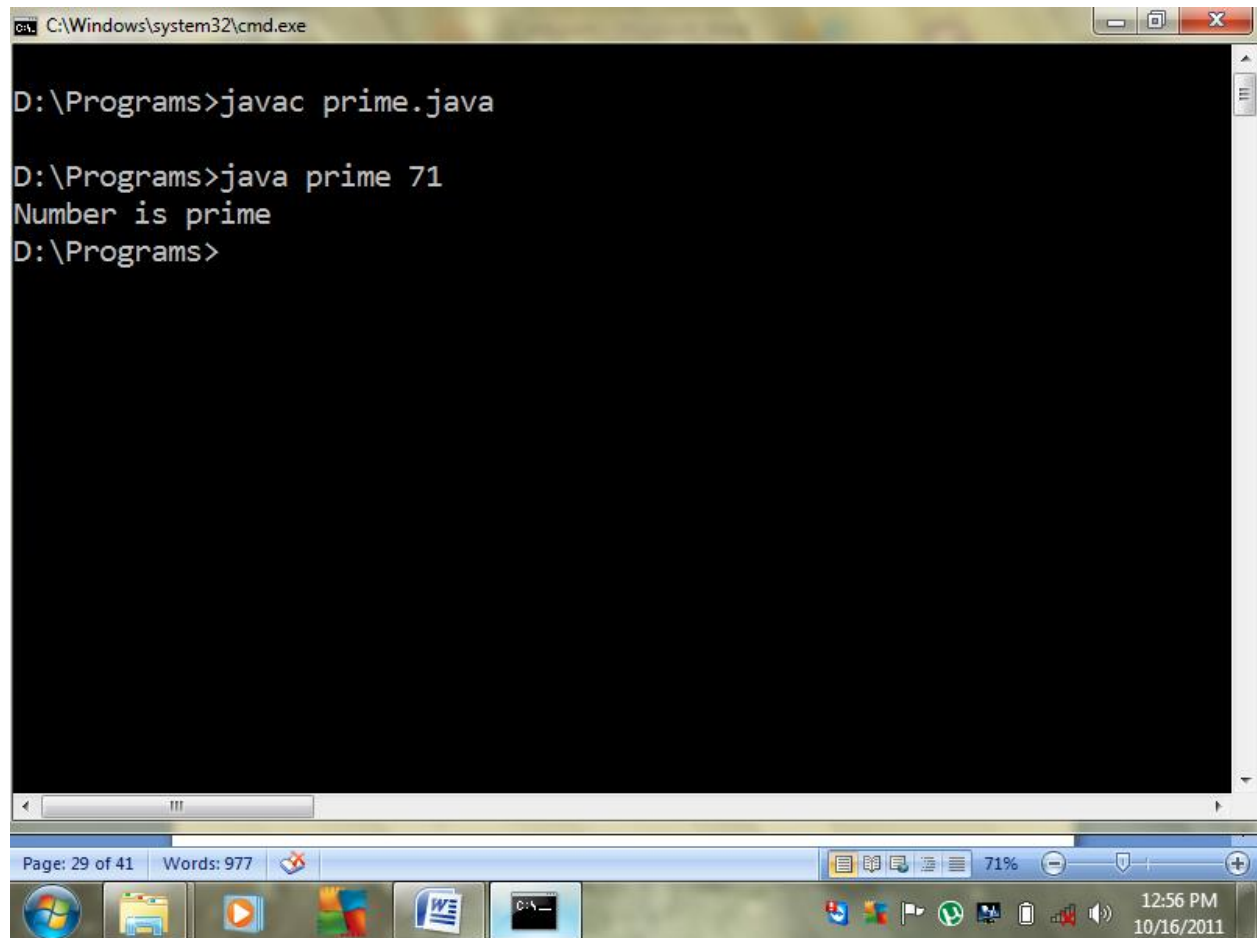
else

System.out.print("Number is prime");

}

}

Output:-



A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The command prompt shows the following sequence of commands and output:

```
D:\Programs>javac prime.java  
  
D:\Programs>java prime 71  
Number is prime  
D:\Programs>
```

The window is part of a desktop environment. At the bottom, there is a taskbar with several icons: Internet Explorer, File Explorer, a media player, a folder, a Word document, and the command prompt itself. The system tray on the right shows the date and time as "12:56 PM 10/16/2011". Above the taskbar, a status bar from a document viewer is visible, showing "Page: 29 of 41" and "Words: 977".

16.

/*Program to sum of the elements of an array*/

import java.io.DataInputStream;

class arraelsum

{

public static void main(String arg[])throws Exception

{

int n,i,j,sum=0;

int number[];

DataInputStream in=new DataInputStream(System.in);

System.out.print("How many Numbers=");

n=Integer.parseInt(in.readLine());

number=new int[n];

for(i=0;i<n;i++)

{

number[i]=Integer.parseInt(in.readLine());

sum=sum+number[i];

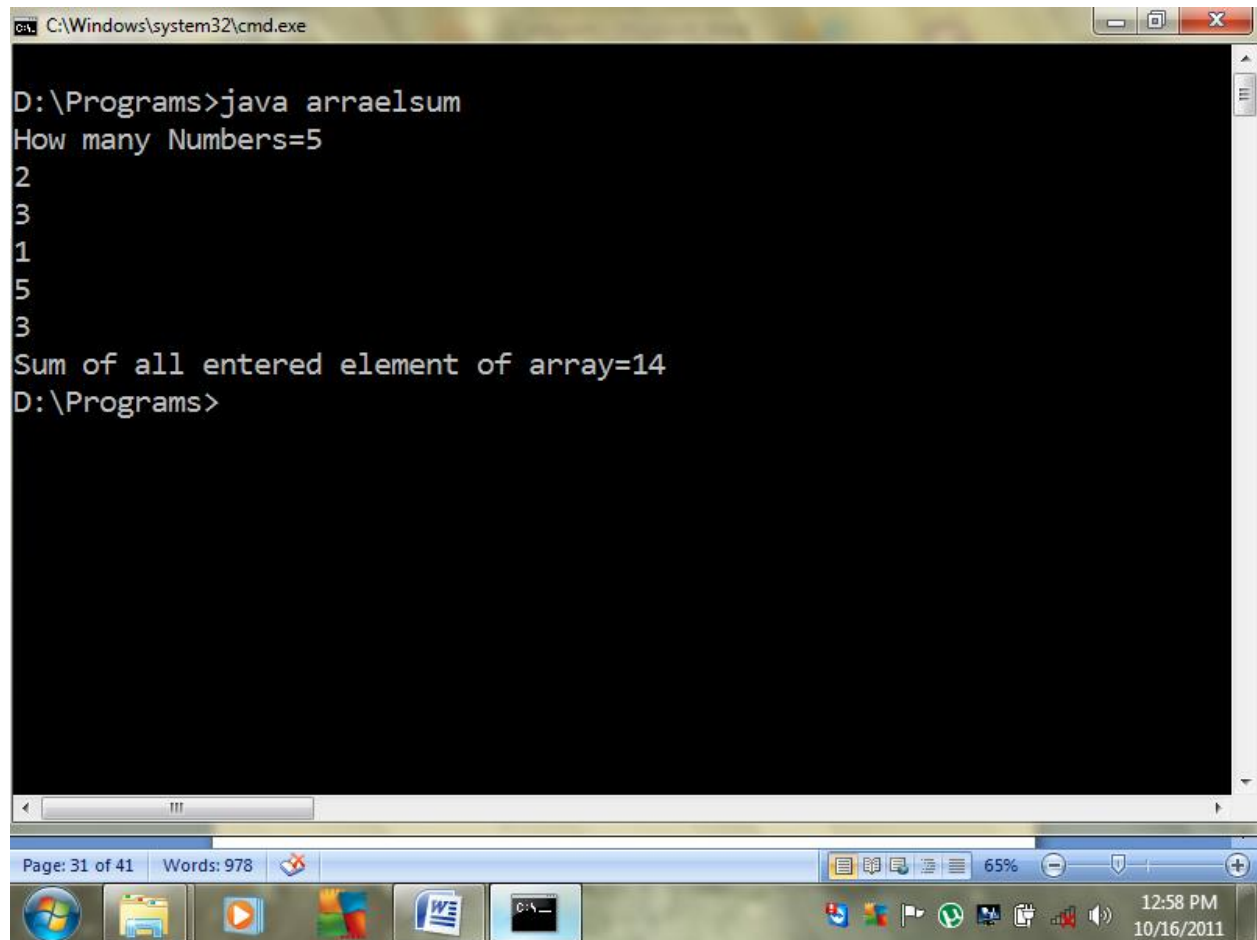
}

System.out.print("Sum of all entered element of array="+sum);

}

}

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The command prompt is open at the directory "D:\Programs". The user has entered the command "java arraelsum". The program outputs "How many Numbers=5", followed by five lines of input: "2", "3", "1", "5", and "3". The program then outputs "Sum of all entered element of array=14". The command prompt is now at the "D:\Programs>" prompt. Below the command prompt, there is a taskbar with various icons, including the Start button, Internet Explorer, and several application icons. The system tray shows the time as "12:58 PM" and the date as "10/16/2011".

```
C:\Windows\system32\cmd.exe

D:\Programs>java arraelsum
How many Numbers=5
2
3
1
5
3
Sum of all entered element of array=14
D:\Programs>
```


18.

/*Program to calculate area and circumference of circle */

class areaofcircle

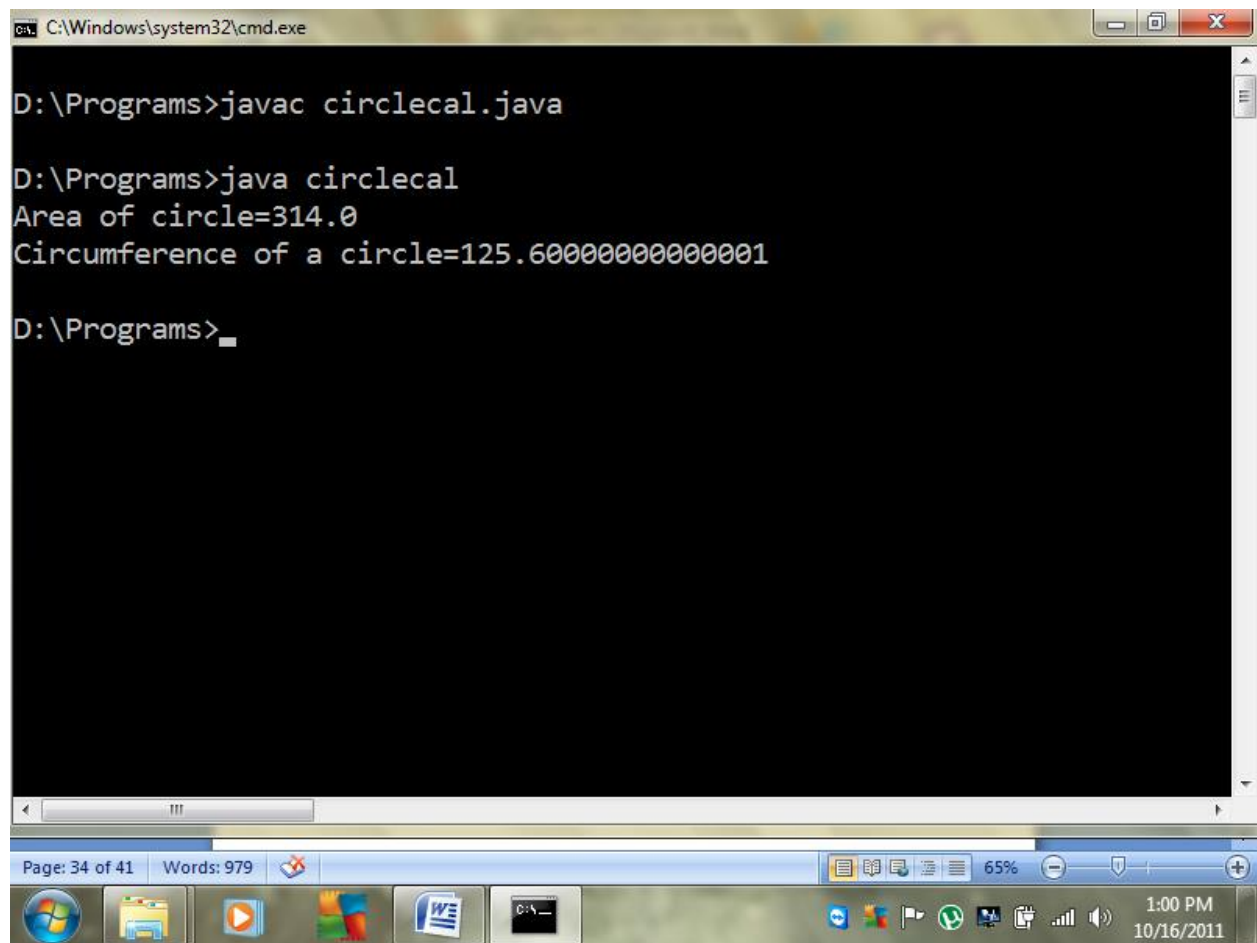
```
{  
  
    double radius;  
  
    areaofcircle(double r)  
    {  
  
        radius=r;  
  
    }  
  
    void area()  
    {  
  
        double ar;  
  
        ar=3.14*radius*radius;  
  
        System.out.println("Area of circle="+ar);  
  
    }  
}
```

class circumofcircle

```
{  
  
    double radius;  
  
    circumofcircle(float r)  
    {  
  
        radius=r;  
  
    }  
  
    void circumference()  
    {
```

```
        double circum;  
  
        circum=2*3.14*radius;  
  
        System.out.println("Circumference of a circle="+circum);  
    }  
}  
  
class circlecal  
{  
  
    public static void main(String arg[])  
    {  
  
        areaofcircle obj =new areaofcircle(10);  
  
        obj.area();  
  
        circumofcircle obj1=new circumofcircle(20);  
  
        obj1.circumference();  
    }  
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The command prompt is open at the directory "D:\Programs". The user has entered the command "javac circlecal.java" and then "java circlecal". The output of the program is displayed as follows:

```
D:\Programs>javac circlecal.java

D:\Programs>java circlecal
Area of circle=314.0
Circumference of a circle=125.60000000000001

D:\Programs>_
```

The taskbar at the bottom of the screen shows the Windows 7 interface with the Start button, taskbar icons for Internet Explorer, File Explorer, Windows Media Center, and Microsoft Word, and a system tray with the date and time "1:00 PM 10/16/2011".

19.

/*Program to calculate area of rectangle*/

class areaofrect

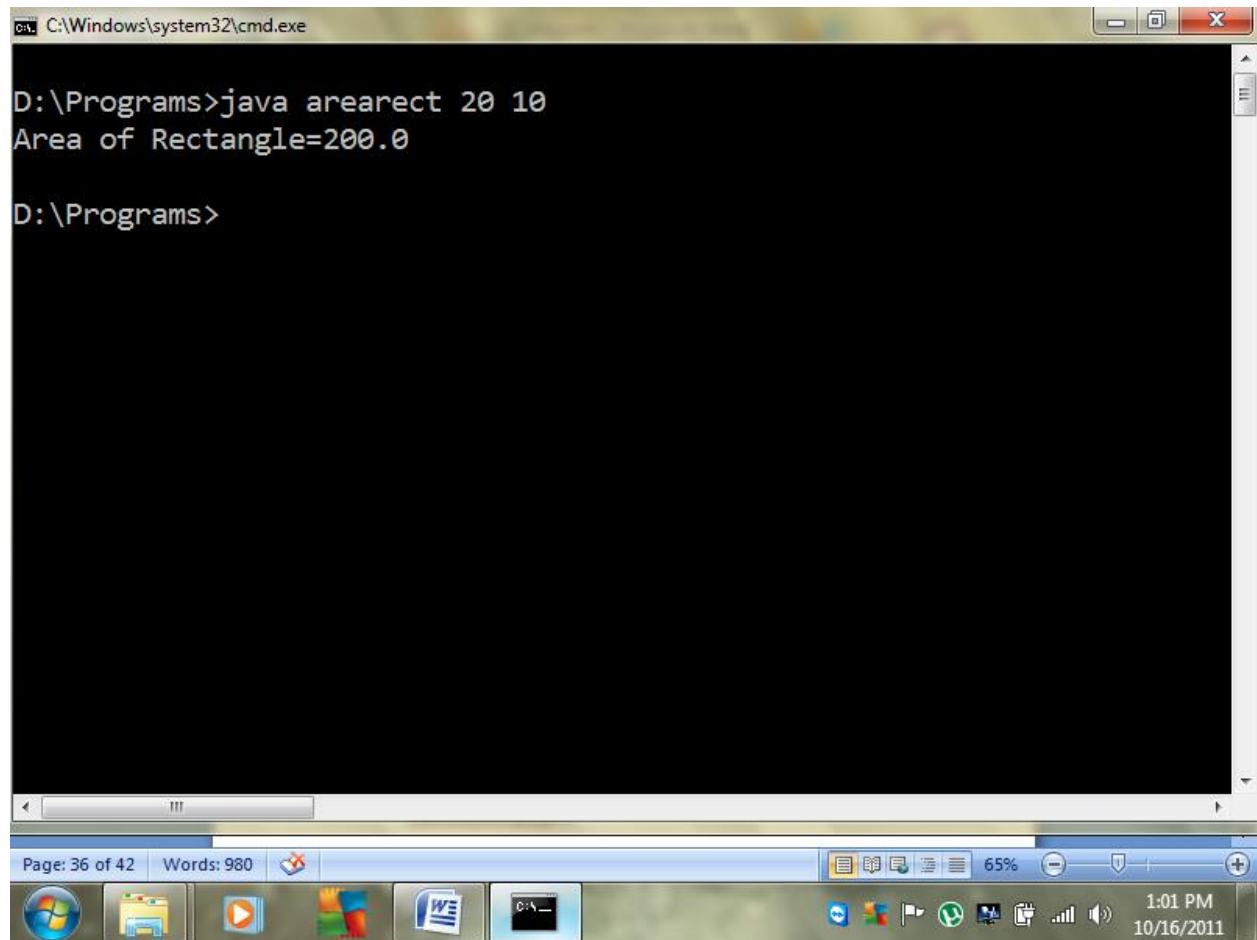
```
{  
    float length,width;  
    areaofrect(float l,float w)  
    {  
        length=l;  
        width=w;  
    }  
    void area()  
    {  
        float ar;  
        ar=length*width;  
        System.out.println("Area of Rectangle="+ar);  
    }  
}
```

class arearect

```
{  
    public static void main(String arg[])  
    {  
        float len,wid;  
        len=Float.parseFloat(arg[0]);  
        wid=Float.parseFloat(arg[1]);  
        areaofrect obj =new areaofrect(len,wid);  
    }  
}
```

```
        obj.area();  
    }  
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The prompt is at "D:\Programs>". The user has entered the command "java arearect 20 10", and the output is "Area of Rectangle=200.0". The prompt is now "D:\Programs>". The window is overlaid on a document titled "Page: 36 of 42 Words: 980". The taskbar at the bottom shows various icons, including the Start button, Internet Explorer, and several open applications. The system clock in the bottom right corner shows "1:01 PM 10/16/2011".

```
C:\Windows\system32\cmd.exe  
  
D:\Programs>java arearect 20 10  
Area of Rectangle=200.0  
  
D:\Programs>
```

21.

/*Program to find the factorial of a number using recursion */

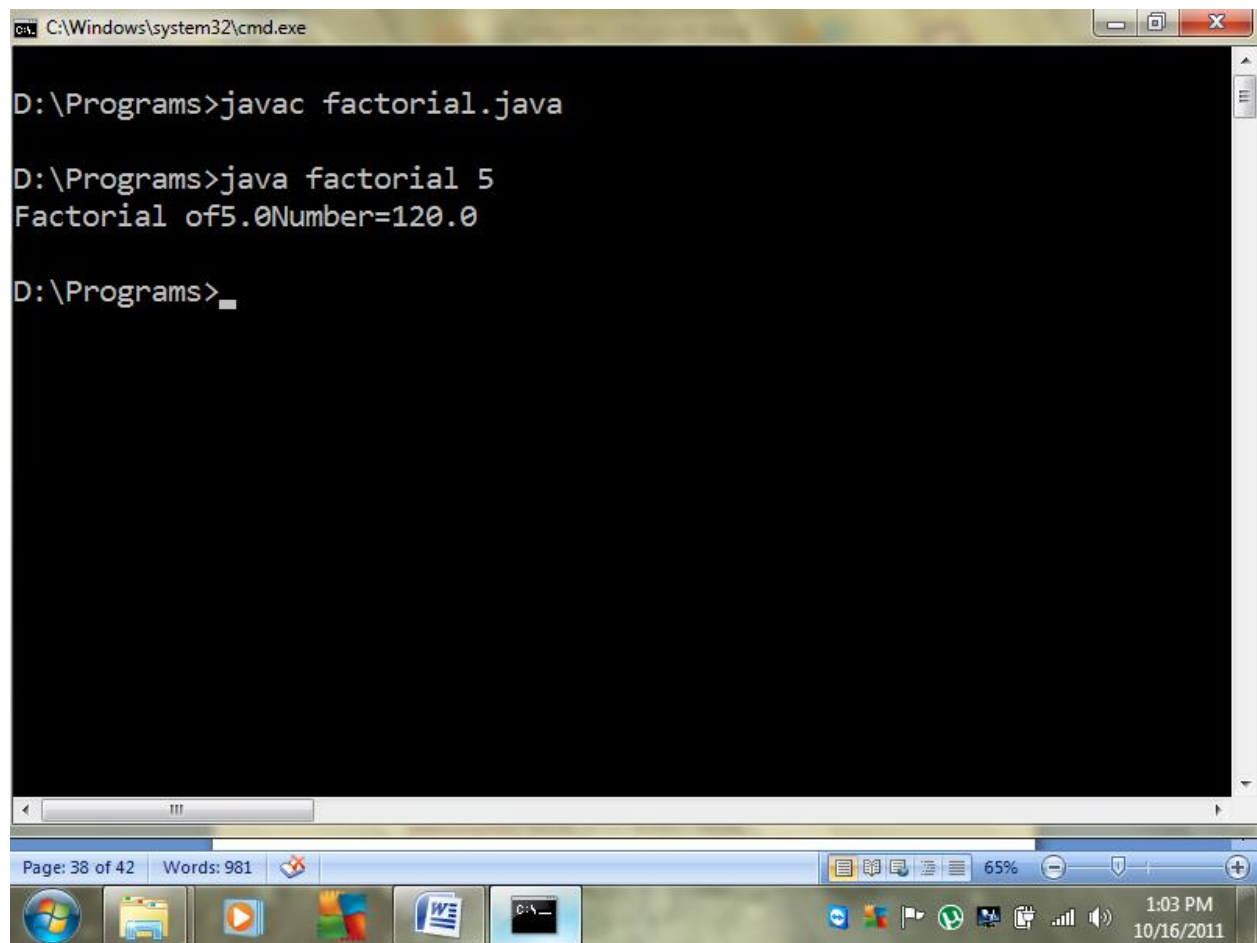
class calculate

```
{  
    float calfacto(float number)  
    {  
        if(number==0)  
            return 1;  
        else  
            return (number*calfacto(number-1));  
    }  
}
```

class factorial

```
{  
    public static void main(String arg[])  
    {  
        float n,result;  
        n=Float.parseFloat(arg[0]);  
        calculate obj=new calculate();  
        result=obj.calfacto(n);  
        System.out.println("Factorial of"+n+"Number="+result);  
    }  
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The command prompt is open at the directory "D:\Programs". The user has entered the command "javac factorial.java" and pressed Enter. The prompt has moved to the next line. The user has then entered "java factorial 5" and pressed Enter. The output of the command is "Factorial of5.0Number=120.0". The prompt has moved to the next line. The user has entered "D:\Programs>" and pressed Enter, resulting in a blank line with a cursor.

```
C:\Windows\system32\cmd.exe

D:\Programs>javac factorial.java

D:\Programs>java factorial 5
Factorial of5.0Number=120.0

D:\Programs>
```

The taskbar at the bottom of the screen shows the following icons from left to right: Start button, Internet Explorer, VLC media player, Windows Explorer, Microsoft Word, and the command prompt window. The taskbar also displays the page number "Page: 38 of 42", the word count "Words: 981", the zoom level "65%", and the system clock "1:03 PM 10/16/2011".

22.

/*Program to implement the concept of inheritance */

class room

```
{  
    int length,breadth;  
    room(int l,int b)  
    {  
        length=l;  
        breadth=b;  
    }  
    void areaofroom()  
    {  
        System.out.println("Area of room="+length*breadth);  
    }  
}
```

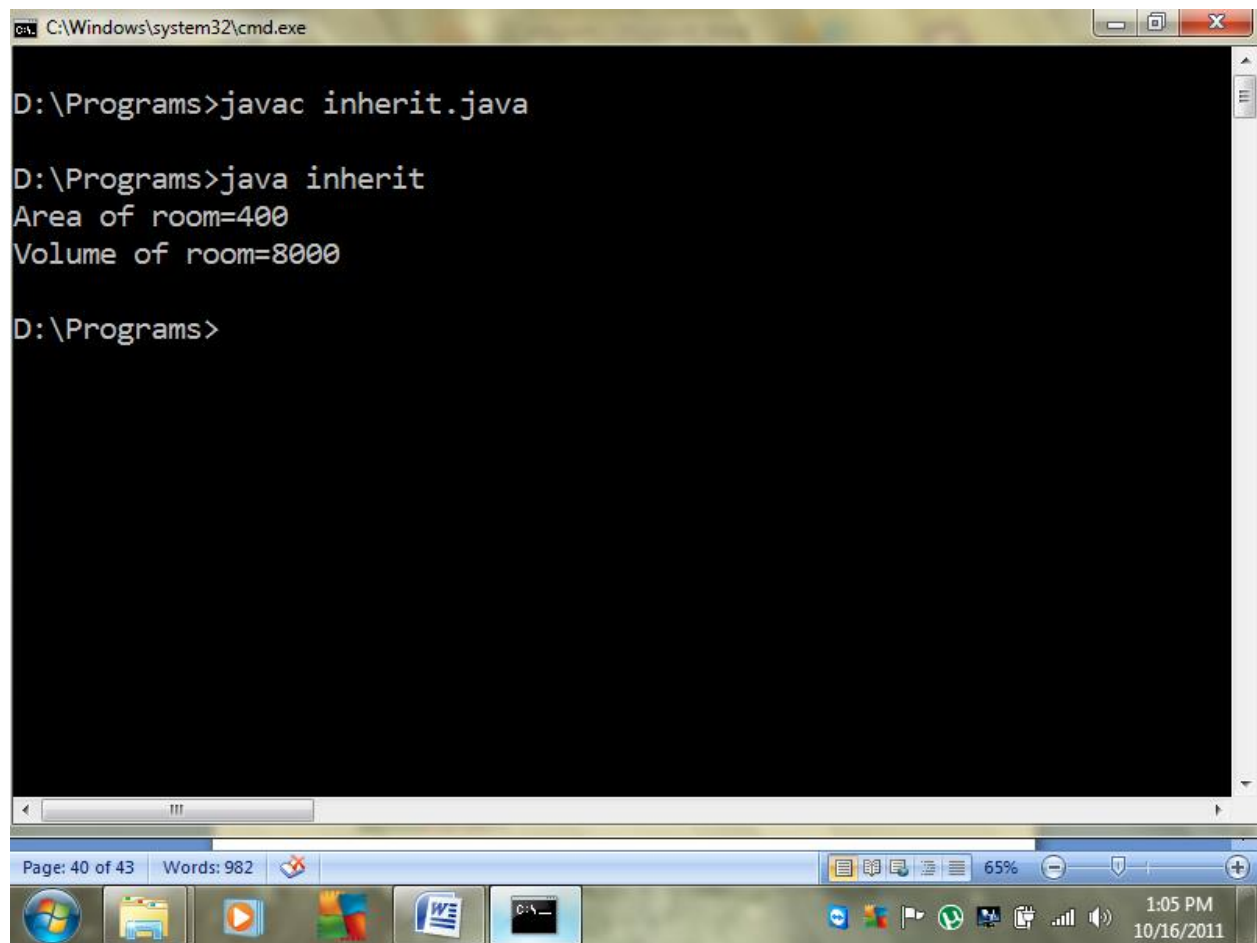
class bedroom extends room

```
{  
    int height;  
    bedroom(int l,int b,int h)  
    {  
        super(l,b);  
        height=h;  
    }  
    void volumeofroom()  
    {
```



```
        System.out.println("Volume of room="+length*breadth*height));
    }
}
class inherit
{
    public static void main(String arg[])
    {
        bedroom r1=new bedroom(20,20,20);
        r1.areaofroom();
        r1.volumeofroom();
    }
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The command prompt is open at the directory "D:\Programs". The user has entered the command "javac inherit.java", which has been executed. Then, the user has entered the command "java inherit", which has also been executed. The output of the program is displayed on the next two lines: "Area of room=400" and "Volume of room=8000". The command prompt is now waiting for the next command, indicated by the "D:\Programs>" prompt.

```
C:\Windows\system32\cmd.exe

D:\Programs>javac inherit.java

D:\Programs>java inherit
Area of room=400
Volume of room=8000

D:\Programs>
```

Page: 40 of 43 Words: 982 65% 1:05 PM 10/16/2011

23.

/*Program that illustrate the use of interfaces*/

interface area

{

 final static float pi=3.14F;

 float compute(float a,float b);

}

class rectarea implements area

{

 public float compute(float a,float b)

 {

 return(a*b);

 }

}

class circlearea implements area

{

 public float compute(float a,float b)

 {

 return(pi*a*a);

 }

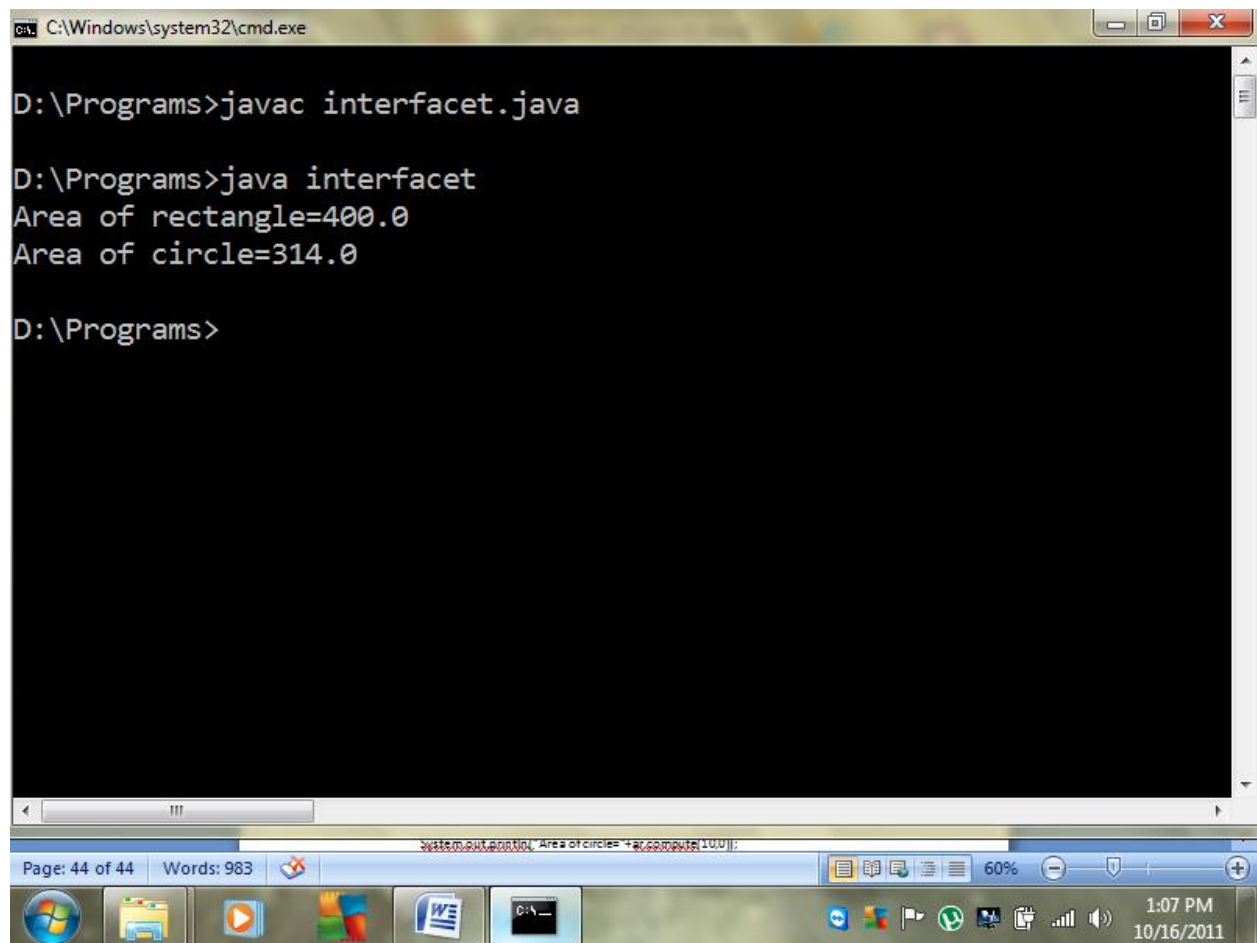
}

class interfacet

{

```
public static void main(String arg[])
{
    rectarea rect=new rectarea();
    circlearea cir=new circlearea();
    area ar;
    ar=rect;
    System.out.println("Area of rectangle="+ar.compute(20,20));
    ar=cir;
    System.out.println("Area of circle="+ar.compute(10,0));
}
}
```

Output:-



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The user is in the directory "D:\Programs". The commands and their outputs are as follows:

```
D:\Programs>javac interfacet.java

D:\Programs>java interfacet
Area of rectangle=400.0
Area of circle=314.0

D:\Programs>
```

The taskbar at the bottom shows the Windows 7 interface with the Start button, taskbar icons for Internet Explorer, File Explorer, Media Center, Windows Defender, Word, and the command prompt. The system tray on the right shows the date and time as "1:07 PM 10/16/2011".