

جو لوگ ایمان لائے اور نیک عمل کرتے اور نماز پڑھتے اور زکوٰۃ دیتے رہے ان کو ان کے کاموں کا صلہ خدا کے ہاں ملے گا اور (قیامت کے دن) ان کو نہ کچھ خوف ہو اور نہ وہ غمناک ہوں گے۔ البقرہ آیت ۲۷۷

## Solution Homework 02

### [Math & String class Functions]

#### Task 1

System.out.println("2 ^ 1 = "+(int)Math.pow(2,1));	2^1=2
System.out.println("2 ^ 2 = "+(int)Math.pow(2,2));	2^2=4
System.out.println("2 ^ 3 = "+(int)Math.pow(2,3));	2^3=8
System.out.println("2 ^ 4 = "+(int)Math.pow(2,4));	2^4=16
System.out.println("2 ^ 5 = "+(int)Math.pow(2,5));	2^5=32

#### Task 2

Create a program to take r, theta (30, 45, 60, 90 etc.) as input from user. Calculate and show following?

Area of Square:  $r^2$

Area of Circle:  $\pi r^2$

Area of Sector:  $\frac{1}{2}r^2\theta$ : For this use **Math.toRadians** function see

```
int radius;
double r,t,theta;
Scanner scan=new Scanner(System.in);
System.out.println("Enter Radius ");
radius=scan.nextInt();
System.out.println("Enter Theta ");
theta=scan.nextInt();
r=Math.pow(radius,2);
System.out.print("Area of Square: ");
System.out.println(r);
System.out.print("Area of Circle: ");
System.out.println(Math.PI*r);
System.out.print("Area of Sector: ");
t=0.5*r*Math.toRadians(theta);
System.out.println(t);
```

#### Task 3

Create a program to take theta (in degrees) as input. Show sin, cos and tan ?

If your output is not correct again use **Math.toRadians** function to convert theta in radians

```
double theta,sin,cos,tan,rtheta;
public static void main(String args[]){
Scanner scan=new Scanner(System.in);
System.out.println("Enter theta in degree ");
theta=scan.nextDouble();
rtheta=Math.toRadians(theta);
sin=Math.sin(rtheta);
```

```
System.out.println("Sin("+theta+")= "+sin);
```

```

cos=Math.cos(rtheta);
System.out.println("Cos("+theta+")== "+cos);
tan=Math.tan(rtheta);
System.out.println("tan("+theta+")== "+tan);
    
```

**Task 4**

<pre> String s = "welcome";//replace ? by System.out.println ? (s.substring(0,7)); ? (s.substring(0,6)); ? (s.substring(0,5)); ? (s.substring(0,4)); ? (s.substring(0,3)); ? (s.substring(0,2)); ? (s.substring(0,1));                 </pre>	<pre> welcome welcom welco welc wel we w                 </pre>
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**Task 5**

<pre> String s = "welcome"; //replace ? by System.out.print ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " "); ? (s.substring(0,1)+ " ");                 </pre>	<pre> w e l c o m e                 </pre>
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**Task 6**

```

String s = "Welcome"
Show s as it is, in upper case and lower case. See
function toLowerCase & toUpperCase in String class
? (s.toUpperCase());
? (s.toLowerCase());
    
```

**Task 7**

```

String s1="Welcome";// Use concat function
s1.concat(" MIT"); and print s1
s1=s1.concat("MIT");
System.out.println(s1);
    
```