**Assignment**

**DCA1103 – Basic MATHEMATICS**

**Set- Ist**

**1. Find the identity and inverse elements for the binary operation**

$$a\*b=a+b-1$$

**Solution:**

Its Half solved only

Buy Complete from our online store

<https://smuassignment.in/online-store/>

MUJ Fully solved assignment available for**session Jan/Feb 2022,**

Lowest price guarantee with quality.

Charges**INR 200 only per assignment.**For more information you can get via mail or Whats app also

Mail id is aapkieducation@gmail.com

Our website www.smuassignment.in

After mail, we will reply you instant or maximum

1 hour.

Otherwise you can also contact on our

whatsapp no 8791490301.

**2. If the function** $f\left(x\right)+\left\{\begin{array}{c}3x-8 if x\leq 5\\2k if x>5\end{array}\right.$

 **is continuous at** $x=5 $**then find the value of k.**

**Solution:** For the function f(x)  to continuous at x=5

We must have, x→5−lim​f(x)=x→5+lim​f(x)=f(5)

⇒x→5lim

**3. a (a). If** $sinα=2 sinβ$ **then prove that**

$$\tan(\left(\frac{α-β}{2}\right))=\frac{1}{2}tan⁡(\frac{α+β}{2})$$

**b *Prove that*** $\frac{Sin A+Sin 3A}{Cos 3A+Cos A}=tan 2A$

## Solution:

## LHS : sinA+sin3A​/cosA+cos3A

## ⇒

**Set- IInd**

4. **(a). Test for divergence of the following series:**

$$1^{2}+2^{2}+3^{2}+……+n^{2}+……..$$

**(b) Test the convergence of the series**

$$\frac{1}{1.2}+\frac{1}{2.3}+\frac{1}{3.4}+………..$$

**Solution:** Consider the given series as:

**5. Define differential equation and solve**

$$y^{2}dx+\left(3xy-1\right)dy=0$$

## Solution: Consider the problem

## Y^2 dx+(3xy−1)dy=0

## Y^2dx=(1−3xy)dy

## dx/dy

6. **Solve the following system of equations by Matrix Method**

$$x+y=0$$

$$y+z=1$$

$$ z+x=3$$

**Solution**: The given systems of equations are:

x+y =0

y+z