

# MATHS

## Assignment-1.0

### Relations and Functions

By

**BHARAT BHUSHAN @ B. K. NAL**

*Assistant Professor (Computer Science)*

*Director, BSTI, Kokar*

&

**SUPRIYA BHARATI**

*Assistant Professor (Computer Science)*

*Asst. Director, BSTI, Kokar*



**Buddha Science & Technical Institute**

Kokar, Ranchi-834001, Jharkhand, India

[www.bharatsir.com](http://www.bharatsir.com)

**RELATION AND FUNCTION**

- Let  $*$  be any binary operation defined by  $a*b = 3a + 4b - 2$ . Find  $4*5$ .
- Show that the relation defined by  

$$R = \{(a, b) : a - b \text{ divisible by } 3; a, b \in \mathbb{N}\}$$
is an equivalent relation.
- The  $f(x)$  is invertible function, find the inverse of  $f(x) = \frac{3x-2}{5}$
- Let  $T$  be the set of all triangle in a plane with  $R$  is relation in  $T$  given by  

$$R = \{T_1, T_2; T_1 \cong T_2\}$$
. Show that  $R$  is a equivalent relation.
- If  $f(x) = x + 7$  and  $g(x) = x - 7, x \in \mathbb{R}$ , find  $(f \circ g)(7)$
- (a) Is the binary operation  $*$ , defined on set  $\mathbb{N}$ , given by  

$$a*b = \frac{a+b}{2} \text{ for all } a, b \in \mathbb{N}, \text{ commutative?}$$
  
(b) Is the above binary operation  $*$  associative?

Note : if any mistake on this, kindly inform on the mail id :

[bkna1207@gmail.com](mailto:bkna1207@gmail.com)

Your Observation! Our Correction !!

