Chapter - 1
ASSIGNMENT

Q1. If $f(x) = x + 7$ and $g(x) = x - 7$, find $(fog)(7)$.s

Q2. Let * be a binary operation defined by a*b = 2a + b -3. Find 3*4.

Q3. If $f(x)$ is an invertible function, find the inverse of $f(x) = \frac{3x-2}{5}$.

Q4. Let * be a binary operation defined by a*b = 3a + 4b -2. Find 4*5.

Q5. (i) Is the binary operation *, defined on the set N, given by a*b = $\frac{a+b}{2}$ for all a, b ϵ N, commutative?

(ii) Is the above binary operation * associative?

Note: In question number 5, in place of N it should be Q or R etc. In fact, on N it is not and operation.

Q6. Show that the relation R defined by (a , b) R(c , d) $\Rightarrow$ a+d = b+c on the set N $\times$N Is an equivalence relation.

Q7. Let T be the set of all triangles in a plane with R as a relation in T given by R={$(T_1, T_2) : T_1 \cong T_2$}. Show that R is and equivalence relation.

Q8. Show that the relation R defined by

R = {(a , b): a-b is divisible by 3; a, b ϵ N}

Is an equivalence relation.

Q9. If f(x) = $\sqrt{x}$, (x>0) and g (x) = $x^2 - 1$, find if fog = gof.

Q10. If f (x) = $\frac{x-1}{x+1}$, $(x \neq -1, 1)$, *show that* fof^{-1} is an identity function.

Q11. If f(x) = $\frac{5x+3}{4x-5}$, $\left(x \neq \frac{5}{4}\right)$, show that fof is an identity function.