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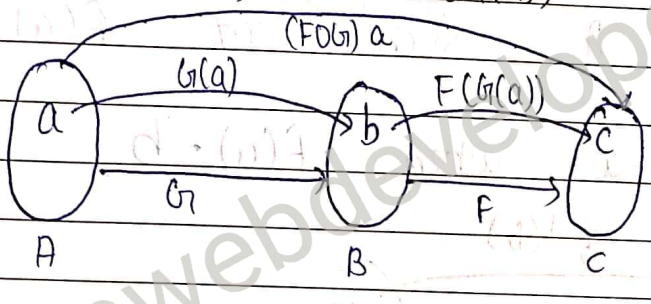
## * Composition of functions

Consider functions $f: A \to B$ and $g: B \to C$. The composition of $f$ with $g$ is a function from $A$ into $C$ defined by $(gof)(x) = gf(x))$ and is denoted by $gof$.

The composition of the function F and G is denoted by FOG is defined by :

$$(FOG)(a) = F(G(a))$$




Example :- Ques: G is a function from the set {a,b,c} to itself such that G(a) = b, G(b) = c and G(c) = a.
F is a function from the set {a,b,c} to the set {1,2,3} such that F(a) = 3, F(b) = 2, F(c) = 1.
Find Composition of F and G.

Sol :-

$G(a) = b$ $\quad F(a) = 3$
$G(b) = c$ $\quad F(b) = 2$
$G(c) = a$ $\quad F(c) = 1$

$FOG(a) = F(G(a)) = F(b) = 2$

$FOG(b) = F(G(b)) = F(c) = 1$

$FOG(c) = F(G(c)) = F(a) = 3$