



The figure illustrates the composition of function g with function f . The function f takes the point x in its domain A , and maps it into a point $f(x)$ in its codomain B . But B is the domain of function g . So, g can be applied to $f(x)$ in B to get a point $g(f(x))$ in the codomain C of g . The overall effect is, for each point x in A , we obtain a point $g(f(x))$ in C . Thus,

$$x \longmapsto g(f(x))$$

defines a function with domain A and codomain C . This function is denoted by $g \circ f$, and is called the composition of g with f . Thus,

$$g \circ f (x) = g(f(x)),$$

for all x in A .