

Operations on functions

Suppose two functions f and g are given. We can then construct 5 new functions whose names are given below. Complete the table. To recall this part, see <https://www.mathsisfun.com/sets/functions-composition.html>

name	definition	domain	Example: $f(x) = \frac{2}{x+1}$ $g(x) = \frac{x}{x-3}$
The sum $f + g$			
The difference $f - g$			
The product fg			
The quotient f/g			
The composition $f \circ g$			

De-composing a function means to write it as a composition of two other functions. Try to describe the steps in this process.

Find two functions f and g such that $h(x) = (f \circ g)(x)$, where $h(x) = \sqrt[3]{2x^2 + 5}$

One-to-one functions

Give the definition of a one-to-one function. To recall this concept watch

<https://www.youtube.com/watch?v=wX5LUHdjU0w>

State the Horizontal Line Test:

Determine which of the following is a one to one function. Explain why.

