

# [Composition and inverse](https://assignbuster.com/composition-and-inverse/)

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Composition and Inverse College Composition and Inverse We define the following functions:
f(x) = 2x + 5 g(x) = x2 - 3 h(x) = (7-x)/3
Compute (f – h)(4).
To evaluate (f – h)(4), the function (f – h)(x) may be found first by subtracting the function h(x) from the function f(x). So,
f(x) – h(x) = 2x + 5 – --- f(x) – h(x) =
--- (f – h)(x) =
Then upon substitution of 4 into ‘ x’, (f – h) (4) = = 12
Evaluate the following two compositions:
A: (fog)(x) would pertain to a composition where the function g(x) is composed within the function f(x) such that g(x) serves as an expression that replaces ‘ x’ in f(x) as follows
--- () (x) = 2 () + 5 = 2x2 – 6 + 5
so the expression x2 – 3 takes the place of ‘ x’ in 2x + 5, then applying distributive property and combining like terms, that reduces to
--- () (x) = 2x2 – 1
B: (hog)(x) would pertain to a composition where the function g(x) is composed within the function h(x), and in a similar function (as in part A), g(x) serves as an expression that replaces ‘ x’ herein –
--- () (x) = =
so the expression x2 – 3 takes the place of ‘ x’ in (7 – x)/3, then distributing the negative sign into the quantity to remove the parentheses and combining like terms, that simplifies to –
--- () (x) =
Graph the g(x) function and transform it so that the graph is moved 6 units to the right and 7 units down.
On transforming g(x) so that the graph shitfs 6 units to the right and 7 units down, the new function would g(x) = - 3 - 7 or - 10 whose graph looks –
2. Find the inverse functions:
C:   (x) --- from y = 2x + 5, variables may be switched so that x = 2y + 5, then isolating the ‘ y’, 5 must be subtracted (both sides) to have x – 5 = 2y, whereupon division by 2,
--- (x) =
D:  (x) --- from y = (7 – x)/3, switching of variables yields 3x = 7 – y, then adding ‘ y’ on both sides of the equation and subtracting ‘ 3x’ to get ‘ y’ by itself on one side,
--- (x) = 7 – 3x