Working With Compound Functions:

A. Working with compound functions is easy if you understand how to work with single functions.

B. Number sense will usually only work with one or two functions and the question will usually will ask for a value instead of an expression. For example, the question might ask for f(f(4)) or g(f(4)). Either way, it is relatively easy.

    1. To use compound functions, you should just work from the inside out.

        Ex [1] If $f(x) = (x - 3)^2$, then $f(f(5)) =$ _____.

          a. First find f(5) then find f(f(5)). So $f(5) = (5 - 3)^2 = 4$. Now we need $f(4)$ which is $(4 - 3)^2 = 1$. Therefore, $f(f(5)) = 1$.

        Ex [2] If $f(x) = x - 3$ and $g(x) = 2x - 1$, then $f(g(3)) =$ _____.

          a. First find g(3) then find f(g(3)). So $g(3) = 2(3) - 1 = 5$. Now we need $f(5)$ which is $5 - 3 = 2$. So $f(g(5)) = 2$.