ALGEBRA 2
PROBLEM SET 4

Question 1. Let $f(x) = 2x - 3$ and $g(x) = 4x + 3$. Compute the following:

(a) $(f + g)(x)$

(b) $(f - g)(x)$

(c) $(f \cdot g)(x)$

(d) $(f \circ g)(x)$

(e) $(g \circ f)(x)$

(f) Did $(g \circ f)(x) = (f \circ g)(x)$?

Question 2. Let f be the function given by the table

x	$f(x)$
1	2
2	3
3	1
4	5
5	4

x	$g(x)$
1	2
2	3
3	4
4	1
5	5

(a) Given that f^{-1} and g^{-1} exist, write down the table for $f^{-1}(x)$ and $g^{-1}(x)$.
(b) Compute the composition

$$(g \circ f)(5), \quad (f \circ g \circ f^{-1})(2)$$

Question 3. Let $f(x) = \dfrac{2x}{x+3}$ and $g(x) = 2x + 3$. Find $f^{-1}(x)$ and $g^{-1}(x)$.