

9.3 and 9.4 Combining Two Functions: Products and Quotients



"I can multiply and divide functions. I know their main properties.
I can apply what I have learned in unfamiliar settings."

Given functions $f(x)$ and $g(x)$:

The **product of two functions** is $f(x) \cdot g(x)$ which can also be written as $(f \times g)(x)$.

The **quotient of two functions** is $f(x) \div g(x)$

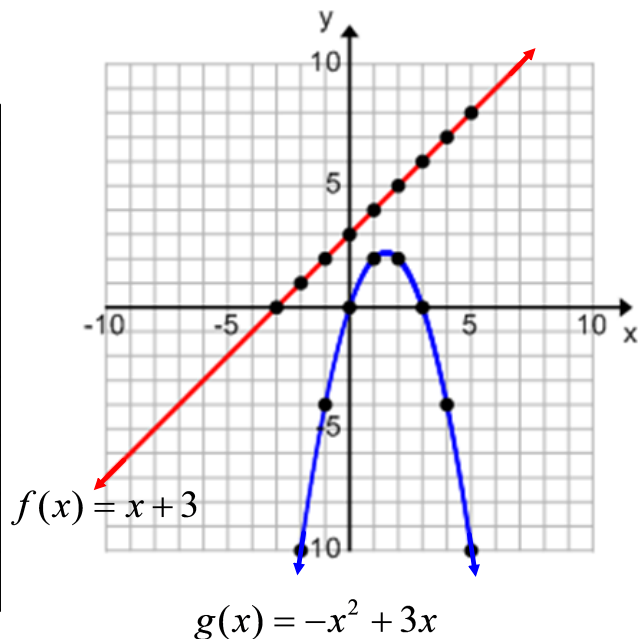
which can also be written as $(f \div g)(x)$, where $g(x) \neq 0$.

Ex. 1:

Complete the table of values, then

graph $(f \div g)(x)$

x	$f(x)$	$g(x)$	$(f \times g)(x)$	$(f \div g)(x)$
-2				
-1				
0				
1				
2				
3				
4				
5				



If unsure, use extra points.

The **domain** of:

$(f \times g)(x)$ is the intersection of the domains of $f(x)$ and $g(x)$.

$(f \div g)(x)$ is the intersection of the domains of $f(x)$ and $g(x)$
except in the case where $g(x) = 0$.

Ex. 2: State the domain of $(f \div g)(x)$ where $f(x) = 3x^2$ and $g(x) = x^3 - 4x$.

READ: p. 537 & p. 542

Practice: pp. 537-538 #4bd, 5bd, 8ab, 10 AND p.542 #1bc, 2 (just for 1bc).