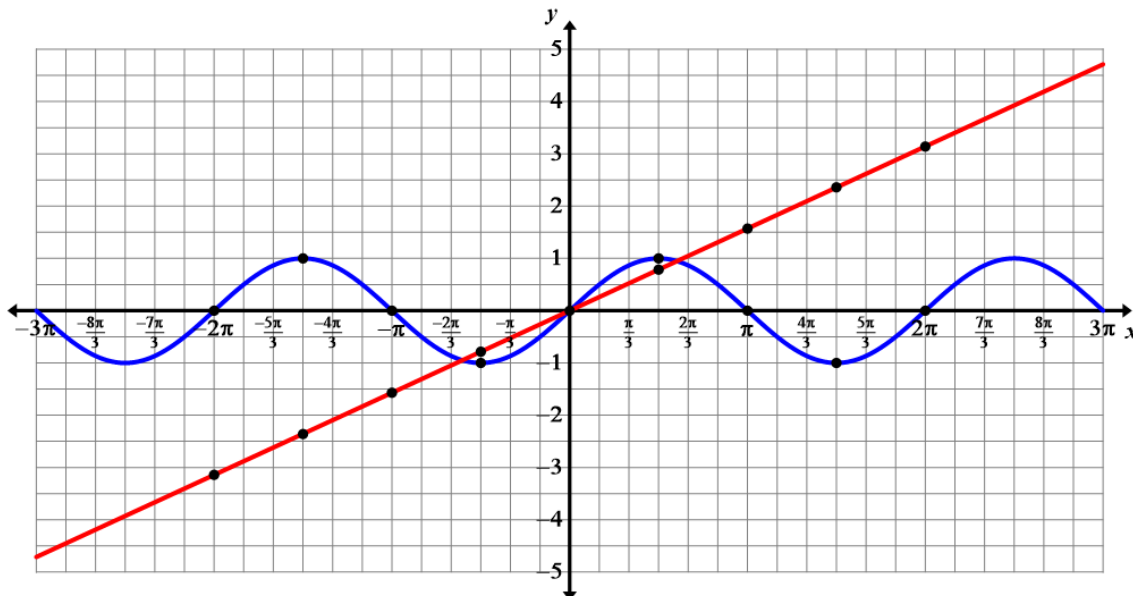## 9.2 Combining Two Functions: Sums and Differences

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

Ex. 1: Below are the graphs of the functions $f(x) = \sin x$ and $g(x) = 0.5x$.
On the interval $[-3\pi, 3\pi]$
a) graph $f(x) + g(x)$, which is the same as $(f + g)(x)$
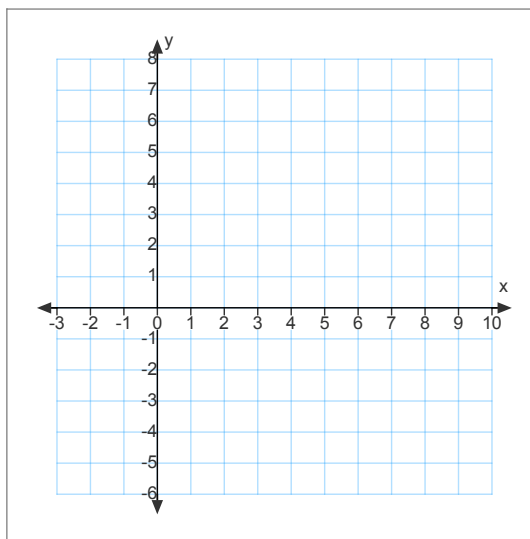b) graph $f(x) - g(x)$, which is the same as $(f - g)(x)$

The **domain** of $f + g$ and $f - g$ is the **intersection** of the domains of f and g.
This means that the functions $f + g$ and $f - g$ are only defined where the
domains of both f and g overlap.

c) State the domain of both new functions.

Ex. 2:
Given: $f(x) = \log(x)$, $g(x) = 2^x$,
State the domain and range of $f + g$.

READ: p. 528
Math Fun: pp. 528-530 #1ce, 2, 3*, 7ac, 8, 10, 12, 16
*answer wrong in back...there is no domain, so it is impossible for f-g to exist.