

7. Sketch the graphs of $f(x) = 3x$, $g(x) = x - 3$, and $(f - g)(x)$.

8. Sketch the graphs of $f(x) = x + 5$, $g(x) = x^2$, and $g(f(x))$.

9. The length of a rectangle is 5 units more than its width. If the original width is w , find an expression for the increase in area if each dimension is increased by 8.

10. The price of a CD player is reduced by 20% before a sales tax of 7% is added. Show how this is a composition of two functions, and find an expression for the final cost if the original cost of the CD player is C .

11. A stone is thrown into the air with a velocity given by $v(t) = 30 - 9.8t$. The kinetic energy is given by $K(v) = 0.4v^2$. Determine the kinetic energy as a function of the time, t .

12. The graphs of $f(x)$, $g(x)$, and $(f + g)(x)$ are shown. If $f(x) = x + 2$ and $g(x) = -2x - 1$, identify which graph is which.

