Questions

1. Let $f(x) = \sqrt{x}$, $g(x) = x - 4$, $h(x) = \dfrac{1}{x-2}$. Simplify each function and give the domain.

(a) $f + g$

(b) $g \cdot h$

(c) f/g

2. Let $f(x) = 3x - 1$, $g(x) = x^2 + 1$, $h(x) = \dfrac{x+1}{3}$. Simplify each expression.

(a) $(h \circ f)(x)$

(b) $(h \circ f)(-7)$

(c) $(h \circ g \circ f)(w)$

3. Decompose the function $f(x) = \sqrt{\dfrac{1}{1+x^2}}$ into its most simple decomposition.