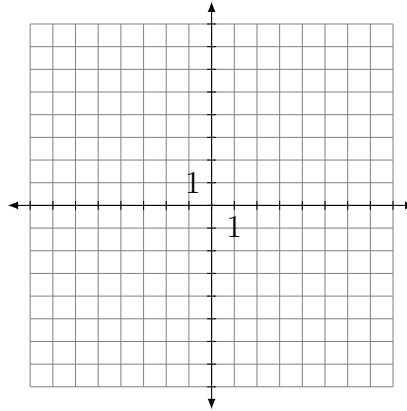
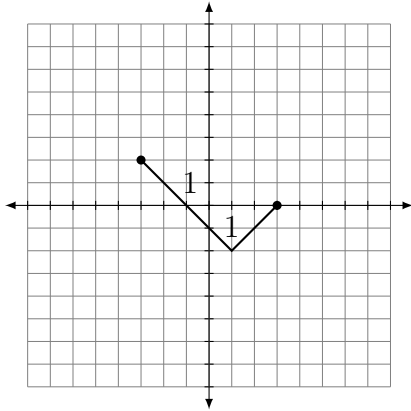


For each problem, show your work.

1. **(5 points)** The graph on the left below depicts a function $f(x)$. Let $g(x) = -f(2x - 1)$ and sketch the graph of $g(x)$ on the right.



2. **(5 points)** Find the inverse of the function $h(x) = \sqrt[5]{\frac{1}{2-3x}}$.
3. **(10 points)** Given $f(x) = \frac{x+1}{x^2-4}$ and $g(x) = \sqrt{x}$, answer the following questions. Formulas need not be simplified.
- (a) **(2 points)** Give formulas for $(f + g)(x)$ and $\frac{g}{f}(x)$, labeling which is which.
- (b) **(3 points)** Give formulas for $f(g(x))$ and $g(f(x))$, labeling which is which.
- (c) **(5 points)** Compute the domains of $(fg)(x)$ and $\frac{f}{g}x$, labeling which is which.