

1. Suppose $f(x) = x^2 + \sqrt{27}x + 6$ and $g(x) = \sqrt{3}x$. Write $(f \circ g)(x)$ in the form $ax^2 + bx + c$ and find the roots of $(f \circ g)(x)$.

2. Find the inverse defined by $f(x) = 2^{2x+3}$. What are the domain and range of f^{-1} ?