

Instructions: Show all work. Use exact answers unless otherwise asked to round.

1. Write the function $f(x) = |x|$ after it has undergone the following transformations in the given order:
 - a. Horizontal shift to the right of 2
 - b. Vertical reflection
 - c. Vertical stretch by 3
 - d. Vertical shift down by 5

2. Find the inverse function $f^{-1}(x)$ for the function $f(x) = \frac{2x-3}{x+1}$. State the domain and range of each.

3. Simplify, and write in standard form.
 - a. $(-4 - 8i)(3 + i)$

 - b. $\frac{3-4i}{4+3i}$

4. The function $f(x) = x^2 - 4x + 4$ is not a one-to-one function. How would you restrict the domain to make it one-to-one? What is its inverse?