Quiz #2

1. Find the inverse of $f(x) = \dfrac{2e^x}{3 + e^x}$.   [2]

2. Solve each equation for x.

    a. $3^{7-3x} = 9$ [2]

    b. $\ln(2x) - \ln(1-x) = \ln 2$ [2]

3. Express $f(x) = 3\ln(x+2) + \ln(x+3) - 2\ln(x-2)$ as a single logarithm.   [2]

4. Determine the value of $\cot^2\left(\dfrac{25\pi}{3}\right)$.   [2]