Show all work on this sheet, including mental steps, in a clearly organized way that speaks for itself. Use proper mathematical syntax/notation. Box short final answers.

1. Solve for \( x \): \[ e^{3x-4} = 2. \]

2. The relativistic mass \( m > 0 \) of a particle with speed \( v \geq 0 \) is: \[
m = f(v) = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}} ,
\]
   where \( m_0 > 0 \) is the rest mass of the particle and \( c > 0 \) is the speed of light in vacuum (i.e., \( m_0 \) and \( c \) are just positive constants).

Find the inverse function \( f^{-1} \) (i.e., \( u = f^{-1}(m) \)) and its domain.