Direction: Find the inverse of each rational function. State the domain and range. Show all your work in the space provided.

1) \( f(x) = \frac{1-2x}{1-x}, \ x \neq 1 \)

2) \( f(x) = \frac{-3x-1}{x+5}, \ x \neq -5 \)

3) \( f(x) = \frac{x+7}{x}, \ x \neq 0 \)
Inverse of Rational Functions

Direction: Find the inverse of each rational function. State the domain and range. Show all your work in the space provided.

1) \( f(x) = \frac{1-2x}{1-x}, \quad x \neq 1 \)

\( f^{-1}(x) = \frac{x-1}{x-2}; \quad \text{Domain: } x \neq 2, \quad \text{Range: } y \neq 1 \)

2) \( f(x) = \frac{-3x-1}{x+5}, \quad x \neq -5 \)

\( f^{-1}(x) = \frac{-5x-1}{x+3}; \quad \text{Domain: } x \neq -3, \quad \text{Range: } y \neq -5 \)

3) \( f(x) = \frac{x+7}{x}, \quad x \neq 0 \)

\( f^{-1}(x) = \frac{7}{x-1}; \quad \text{Domain: } x \neq 1, \quad \text{Range: } y \neq 0 \)