F.BF.B.4: Inverse of Functions 4

1 What is the inverse of $f(x) = \frac{x}{x+2}$, where $x \neq -2$?

1) $f^{-1}(x) = \frac{2x}{x-1}$

2) $f^{-1}(x) = \frac{-2x}{x-1}$

3) $f^{-1}(x) = \frac{x}{x-2}$

4) $f^{-1}(x) = \frac{-x}{x-2}$

2 The inverse of the function $f(x) = \frac{x+1}{x-2}$ is

1) $f^{-1}(x) = \frac{x+1}{x+2}$

2) $f^{-1}(x) = \frac{2x+1}{x-1}$

3) $f^{-1}(x) = \frac{x+1}{x-2}$

4) $f^{-1}(x) = \frac{x-1}{x+1}$

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Answer Section

1 ANS: 2

$$x = \frac{y}{y+2}$$

$$xy + 2x = y$$

$$xy - y = -2x$$

$$y(x-1) = -2x$$

$$y = \frac{-2x}{x-1}$$

REF: 081924aii

2 ANS: 2

$$x = \frac{y+1}{y-2}$$

$$xy - 2x = y + 1$$

$$xy - y = 2x + 1$$

$$y(x-1) = 2x + 1$$

$$y = \frac{2x+1}{x-1}$$

REF: 081714aii