

#208, pg. 182

Difficulty Level: 700+

Topics: Translations & Manipulations; Exponents & Roots

Solution A

Replace x with $1/x \rightarrow$

$$\left(\frac{\frac{1}{x} + 1}{\frac{1}{x} - 1} \right)^2$$

Multiply top and bottom by $x \rightarrow$

$$\left(\frac{1 + x}{1 - x} \right)^2$$

The problem becomes difficult because the expression above isn't in the answer choices, so we must manipulate it to look like the right answer. Because we are dealing with a value squared, the expression above is the same as

$$\left(-\frac{1+x}{1-x} \right)^2 \rightarrow \left(\frac{1+x}{-(1-x)} \right)^2 \rightarrow \left(\frac{1+x}{x-1} \right)^2$$

The correct answer is A