

TRUE or FALSE?

As long as $x \neq 0$, $y \neq 0$ and $x \neq y$

then we have that: $\frac{(x^{-1} + y^{-1})^{-2}}{(x^{-1} - y^{-1})^{-2}} = \frac{x^2 + y^2}{x^2 - y^2}$

TRY: $x = 1$, $y = 2$

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

$$\frac{1}{\left(\frac{3}{2}\right)^2}$$

=

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

=

$$\frac{1}{9/4}$$

$$= \frac{4}{9} \left(\frac{1}{4}\right)$$

$$= -\frac{5}{3}$$

$$= \frac{4}{36} \rightarrow \frac{1}{9} \neq -\frac{5}{3}$$

FALSE