

$$\left(\frac{x-2y}{x^2+2xy} - \frac{x+2y}{x^2-2xy} \right) \cdot \frac{4y^2}{4y^2-x^2} =$$

$$= \frac{x-2y}{x(x+2y)} - \frac{x+2y}{x(x-2y)} \cdot (2y-x) \cdot \left[\frac{4y^2}{x^2-4y^2} \right] =$$

$$\frac{\cancel{x^2-4xy+4y^2} - \cancel{x^2-4xy-4y^2}}{x(x+2y)(x-2y)} \cdot \frac{(x-2y) \cdot (x+2y)}{4y^2} =$$

$$\frac{-8xy \cdot \cancel{(x-2y)(x+2y)}}{\cancel{x(x+2y)(x-2y)} \cdot 4y^2} = \frac{-1}{2y} = \left(\frac{1}{2y} \right)$$