

Factor the following binomial.

$$9x^8z^6 - 169y^2$$

$$9x^8z^6 - 169y^2 = (3x^4z^3)^2 - (13y)^2$$

$$a^2 - b^2 = (a - b)(a + b)$$

$$\begin{aligned} 9x^8z^6 - 169y^2 &= (3x^4z^3)^2 - (13y)^2 \\ &= (3x^4z^3 + 13y)(3x^4z^3 - 13y) \end{aligned}$$