

$$\begin{aligned}(a - b)(a + b) &= a^2 + \cancel{ab} - \cancel{ba} - b^2 \\&= a^2 + \cancel{ab} - \cancel{ba} - b^2 \\&= a^2 + \cancel{ab} - \cancel{ba} - b^2 \\&= a^2 + \cancel{\cancel{ab}} - \cancel{\cancel{ba}} - b^2 \\&= a^2 + \cancel{\cancel{ab}} - \overset{0}{\cancel{\cancel{ba}}} - b^2 \\&= a^2 - b^2\end{aligned}$$