



Problem:

Let $\overline{xy}$ and $\overline{yx}$ be two two-digit integers. Prove that their sum is a composite number.

Solution:

$\overline{xy} + \overline{yx} = 10x + y + 10y + x = 11(x + y) : 11$, and since according to the condition $\overline{xy}$ and $\overline{yx}$ are two-digit $\Rightarrow x, y \geq 1 \Rightarrow x + y \geq 2 \Rightarrow 11(x + y) \neq 11 \Rightarrow$ it is composite $\Rightarrow \overline{xy} + \overline{yx}$ is a composite number.