Prove:
If 1 is a linear combination of \( a \) and \( b \), then \( \text{GCD}(a, b) = 1 \).

Suppose 1 is a linear combination of \( a \) and \( b \).
This means that there are integers \( s, t \) such that \( 1 = as + bt \).

Let \( \text{GCD}(a, b) = d \).

Because \( d \mid a \) and \( d \mid b \), we know (exercise 10) that \( d \mid (as + bt) \).

Since \( d \mid (as + bt) \) and \( as + bt = 1 \) we know that \( d \mid 1 \).

Finally, since \( d \) is an integer and \( d \mid 1 \), we know that \( d = 1 \).