Two numbers have a sum of 45 . You can also say that these two number total 45 . Let $x$ represent one of the numbers. Write an algebraic expression for the other number.

1) Since we already know that one variable is to be called $x$, the other can be called $y$.
2) The word "total" or "sum" corresponds to the operation of addition. So we can write the equation $x+y=45$
3) Then we subtract $x$ from both sides, getting an expression for $y$. $x-x+y=45-x \quad$ setup the subtraction of $x$ from both sides $y=45-x \quad$ simplify, remember that $x-x=0$ on the left side
4) This means that the variable $y$ is represented using the expression 45-x.
