

Further explanation:

Whether you solve this puzzle conceptually or algebraically, a general strategy emerges by which k coins, n of which are heads up, can be manipulated and divided into two groups with an equal number of heads-up coins: Simply separate n coins from the original set of k coins, and turn them all over! This is the “one simple rule” by which any formulation of this puzzle can be solved.

So. Imagine that only ten of the fifty coins are oriented heads up, instead of sixteen. Following our rule, we separate ten coins from the group of fifty and turn all ten of them over. We can't say how many heads each pile will contain, but we *do* know that the number of heads in the pile of ten coins will equal the number of heads in the pile of forty. We can apply the same strategy whether the number of heads-up coins is twenty-seven out of fifty, or three out of one hundred, or five out of 1,000,000. Simply create a second pile of coins equal in number to the number of heads in the entire set, and turn them all over.