Consider the following problem.Given a set of positive intgers $x_1, x_2, x_3, \ldots, x_n$find a subset of this set of integersthat has M as its sum. How can backtracking be used to solve this problem?

solution: We start with a sum with no terms. we build up the sum by successively adding terms.An integer in the sequence is included if the sum remains less less than M when this integer is added to the sum. If a sum is reached so that the adition of any terms is greater than M, backtrack by dropping the last term of sum. We continue this way untill the sum equals to M. When this occured, we'll stop.

Figure 12 displays a backtracking solution to the problem of finding a subset of { 31,27,15,11,7,5 } with the sum equal to 39.

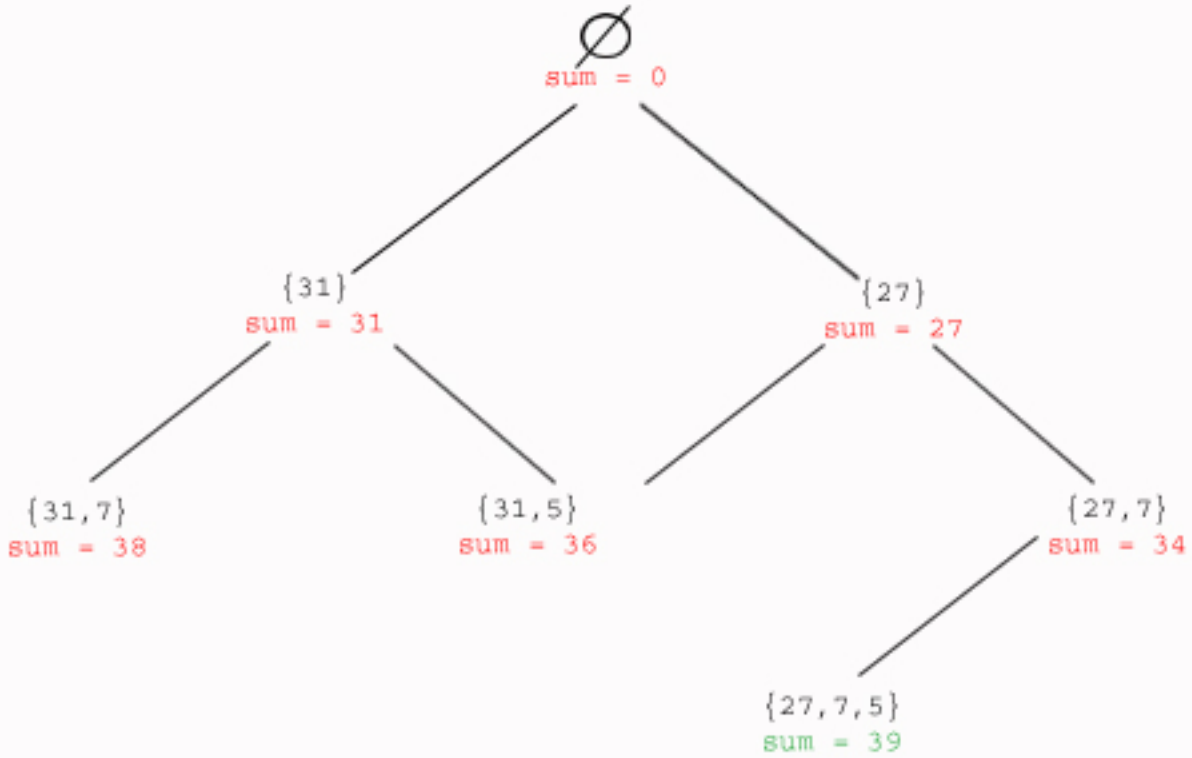

Figure 12 Find a sum equal to 39 Using Backtracking.