

Runs in  $O(n \cdot v)$

Geometric Confections(A):

Input: A sorted list  $A[1..n]$  of integers

Output: The largest value  $V$  that cannot be expressed as a sum of values from  $A$

Initialize a set to track reachable sums

reachable = Set()

$V = \max(A) * 2$

result = 0

Use dynamic programming to mark reachable sums

for  $x = 1$  to  $V$ :

    for num in  $A$ :

        if  $x - \text{num}$  in reachable or  $x == \text{num}$ :

            reachable.add( $x$ )

            break

    else:

        result =  $x$

return result