//subset sum problem - dynamic programming

#include<iostream>

using namespace std;

bool subsetSum(int arr[],int n,int sum){

bool subsum[n][sum+1];

for(int i=0;i<n;i++)

{

subsum[i][0]=true;

for(int j=1;j<=sum;j++)

{

if(j<arr[i])

{

if(i==0)

{

subsum[i][j]=false;

}

subsum[i][j]=(subsum[i-1][j]);

}

else

subsum[i][j]=((subsum[i-1][j]) || (subsum[i-1][j-arr[i]]) );

}

}

return subsum[n-1][sum];

}

int main()

{

int arr[]={ 3, 34, 4, 12, 5, 2 };

int sum=1000;

int n=sizeof(arr)/sizeof(arr[0]);

cout<<subsetSum(arr,n,sum);

return 0;

}