#include <iostream>

#include <queue>

using namespace std ;

struct pqcmpr

{

bool operator () ( int a , int b )

{

return a > b ; // > not < , because default is greater !

}

} ;

int main ()

{

int n , k ;

cin >> n >> k ;

priority\_queue < int , vector < int > , pqcmpr > q ; // vector < int > is imp

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

{

int no ;

cin >> no ;

q.push ( no ) ;

}

int counter = 0 ;

if ( q.empty () == true )

{

counter = - 1 ;

}

else

{

while ( 1 )

{

int element1 = q.top () ;

if ( element1 >= k )

{

break ;

}

q.pop () ;

if ( q.empty () == true )

{

counter = - 1 ;

break ;

}

int element2 = q.top () ;

q.pop () ;

q.push ( element1 + 2 \* element2 ) ;

counter ++ ;

}

}

cout << counter ;

}