

## Ackerman Function

The Ackerman function is defined as:

$$A(m, n) = \begin{cases} n + 1 & | m == 0 \\ A(m - 1, 1) & | n == 0 \\ A(m - 1, A(m, n - 1)) & \end{cases}$$

Write a program that will determine the value of  $A(m, n)$  for values of  $0 \leq m \leq 3$  and  $0 \leq n \leq 15$ . The program should read in 2 integers on a line and print out the corresponding Ackerman value. The program should terminate when 0 0 is read.

Your program should complete on any input in under 5 seconds.

### Example:

1 2    Answer: 4  
3 4    Answer: 125

## Big Integer

Write a program that can add 2 arbitrarily large integers. Input will be of the form a single integer followed by a '+' followed by a second integer followed by an '='. Each term will be separated from the others by spaces. All integers will be well formed. Print the correct sum of the two integers. Input will be terminated by the end of file.

### Example:

1234 + 1234 = 2468  
999 + 9 = 1008