



Design and Analysis  
of Algorithms I

# Introduction

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## Integer Multiplication

# Integer Multiplication

Input : 2 n-digit numbers  $x$  and  $y$

Output : product  $x*y$

“Primitive Operation” - add or multiply 2 single-digit numbers



# The Algorithm Designer's Mantra

“Perhaps the most important principle for the good algorithm designer is to refuse to be content.”

-Aho, Hopcroft, and Ullman, *The Design and Analysis of Computer Algorithms*, 1974

CAN WE DO BETTER ?  
[ than the “obvious” method]