

COMPUTER SCIENCE 20, SPRING 2012  
DISCRETE MATHEMATICS FOR COMPUTER SCIENCE

Class #21 (Order Notation)

**Homework, due in hard copy Friday 3/30/2012 at 10:10am**

**Please write your TF's name on your homework, and list the names of any students with whom you collaborated.**

1. Fill in the following table—check off the box corresponding to functions  $f$  and  $g$  and relation  $\rho$  iff  $f(x)$  is  $\rho(g(x))$ . For example, you would check off the lower-right box if you think that  $\sqrt{x} \sim \log(x)$ .

$f(x)$	$g(x)$	$O$	$o$	$\Omega$	$\Theta$	$\sim$
$x$	$x + 100$					
$(0.1)^x$	$1$					
$2^x$	$3^x$					
$\log(x)$	$\log(x^2)$					
$1/x$	$1/\sqrt{x}$					
$\sqrt{x}$	$\log(x)$					