Disco II - Quiz 4

Name:_____ Box #_____

Let $S = \{1, 2, 3, 4, 5, 6, 12, 15\}$, and $\preceq = |$ denote the relation $x|y$ if x exactly divides y.

1. Draw the Hasse diagram for S with respect to the relation $\preceq$. Indicate on the diagram any maximal and minimal elements and the greatest and least elements if they exist.

2. Using the topological sorting algorithm, find two different total orders that refine the given partial order.

3. A upper bound of a subset $A \subseteq S$ is an element b such $a \preceq b$ for each element of A. Lower bounds are similarly defined. Find the (least) upper bound and the (greatest) lower bound for the following sets if one exists.

	least upper bound	greatest lower bound
$\{4, 6\}$		
$\{6, 15\}$		
$\{2, 3, 5\}$		