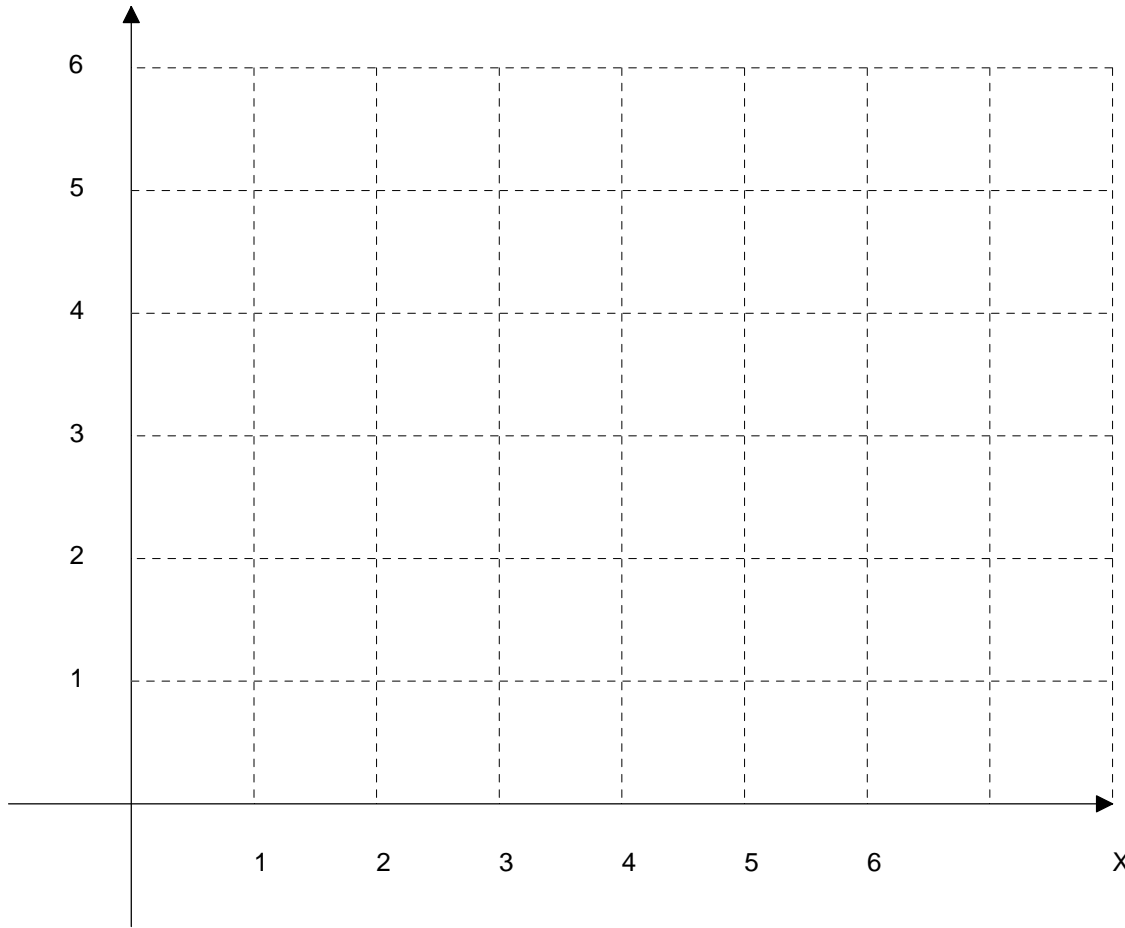


1(4). Prove that the dual of the dual of a primal problem is equivalent to the primal problem for the example below.  
 Find the dual and then find the dual of the dual.  
 Here  $a, b, c, d, e, f, p, q$  are constants.

PRIMAL	DUAL	DUAL OF DUAL
Min $z = px + qy$ with $r: ax + by \leq e$ $s: cx + dy \geq f$ $x, y \geq 0$		

2(6) Solve the primal, canonical and dual problem from the geometric representation of the primal problem.

PRIMAL	CANONICAL	DUAL	OPTIMAL SOLUTION	
Max $z = y$ with $r: -x + y \leq 2$  $s: x + y \leq 6$  $t: x - y \leq 2$ $x, y \geq 0$	max $z = y$ with $r:$  $s:$  $t:$	min $z =$ with $x:$  $y:$	$z =$ when $x =$ $y =$ slacks	duals $r =$ $s =$ $t =$



Draw in each of the three shifted lines  $r+1, s+1, t+1$  which are needed to calculate the dual variables  $r, s,$  and  $t$  via the Marginal Value Theorem.