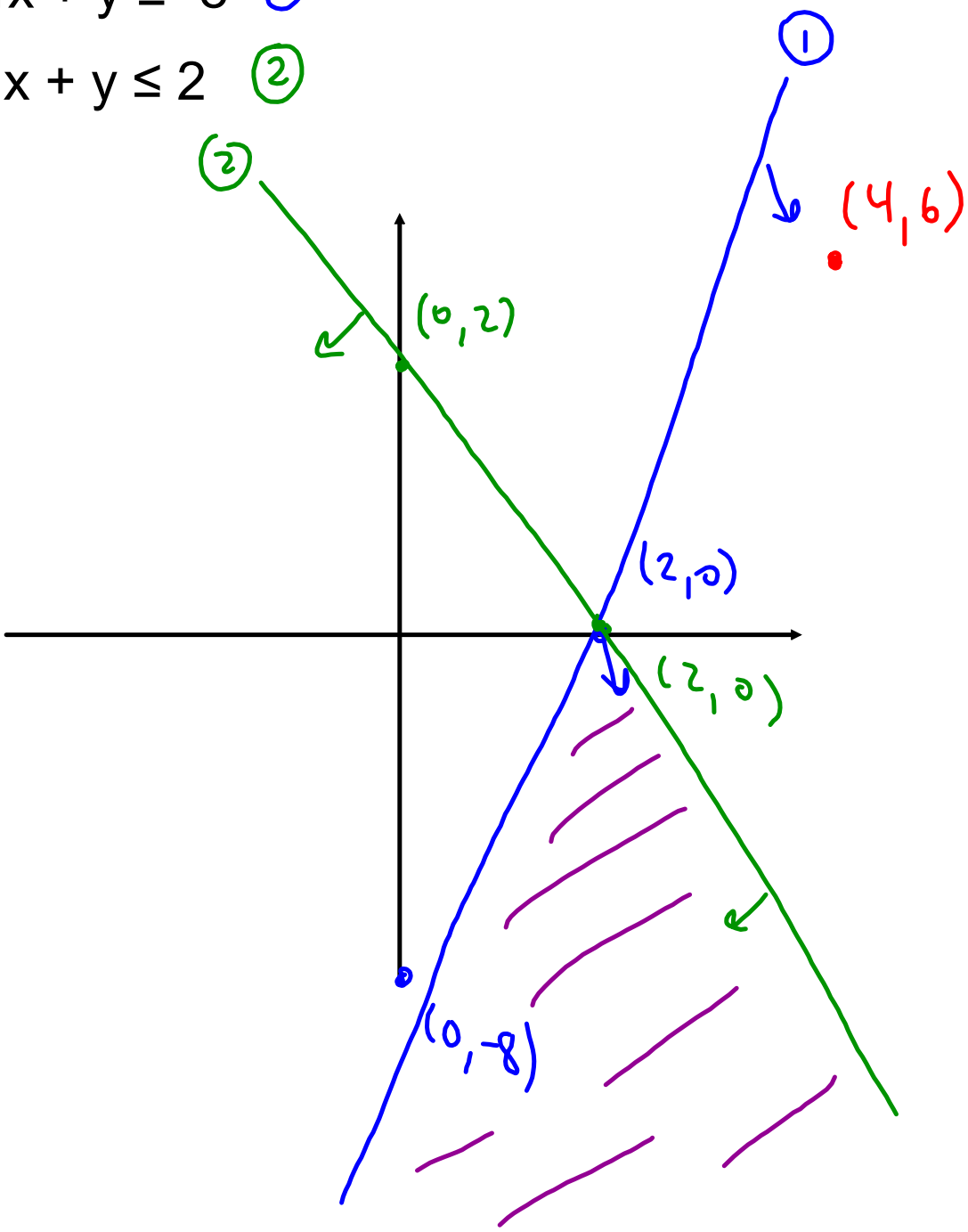
p. 16

#2. a) $-4x + y \leq -8$ ①

$x + y \leq 2$ ②



Does the point P(4,6) satisfy the inequality $-4x+y \leq -8$? Does it also satisfy $x+y \leq 2$? What about the point (-14,-18)?

The point does satisfy both inequalities if it is in the shaded region.

Algebra:

$-4x+y \leq -8$

$-4(4)+(6) \leq -8$

$-16+6 \leq -8$

$-10 \leq -8$ ✓

P(4,6) does satisfy this inequality

$x+y \leq 2$

$4+6 \leq 2$

$10 \leq 2$ ✗

P(4,6) does not satisfy this inequality

To determine whether or not a point satisfies a system of inequalities (is in the solution set):

- substitute x- and y- coord into inequalities
- if statement is true the point does satisfy that inequality
- if statement is false the point does not satisfy that inequality
- all inequalities must be satisfied

p. 16 #1 def

p. 9 #2