Name: _____ Date: _____

Warmup Graph the solution to

$\{(x,y) | 2x - y \leq 4, x \in W, y \in W\}$

x-int: $(y=0)$

$2x - 0 \leq 4$

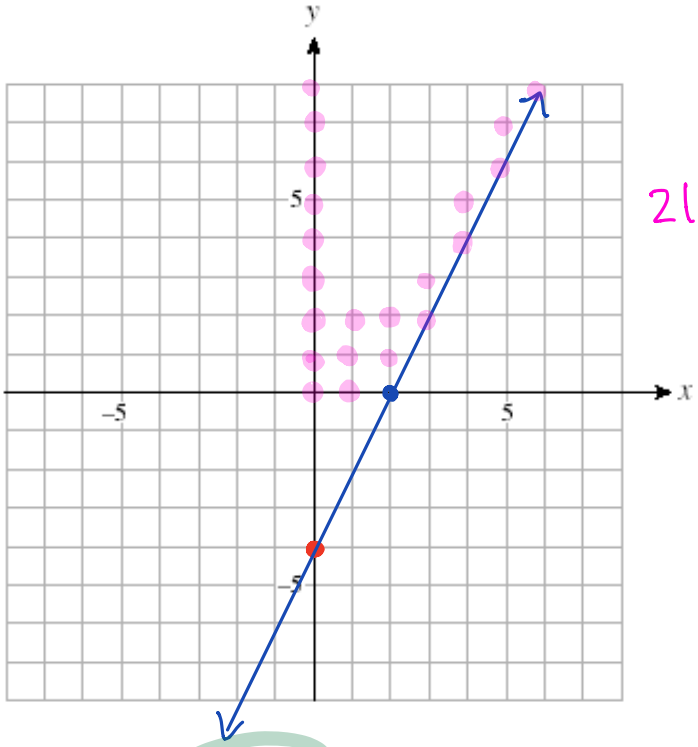
$2x \leq 4$

$x \leq 2$

y-int: $(x=0)$

$0 - y \leq 4$

$y \geqslant -4$



$2(0) - 0 \leq 4$

$0 \leq 4$

Example A hockey team has 8 games left to play and needs 10 points to make the playoffs. A win is worth 2 points and a tie is worth 1 point.

Let *w* be the number of wins the team has and *t* be the number of ties.

a. Write an inequality that relates the number of games remaining to the number of wins and ties the team has.

$w + t \leq 8$

(because clearly they never lose 😐)

b. Write an inequality that relates the number of wins and ties the team has to the number of points they need to make the playoffs.

$2w + t \geqslant 10$

2 points per win

1 point per tie.

We need at least 10 points.

Assignment p.307 #1, 2 Quiz Next Day!

c. Graph the two inequalities on the same grid. Use a distinct shading pattern for the region where both graphs overlap.

$w + t \leq 8$

$2w + t \geq 10$

if $t = 0$, $2w + 0 \geq 10$

$2w \geq 10$

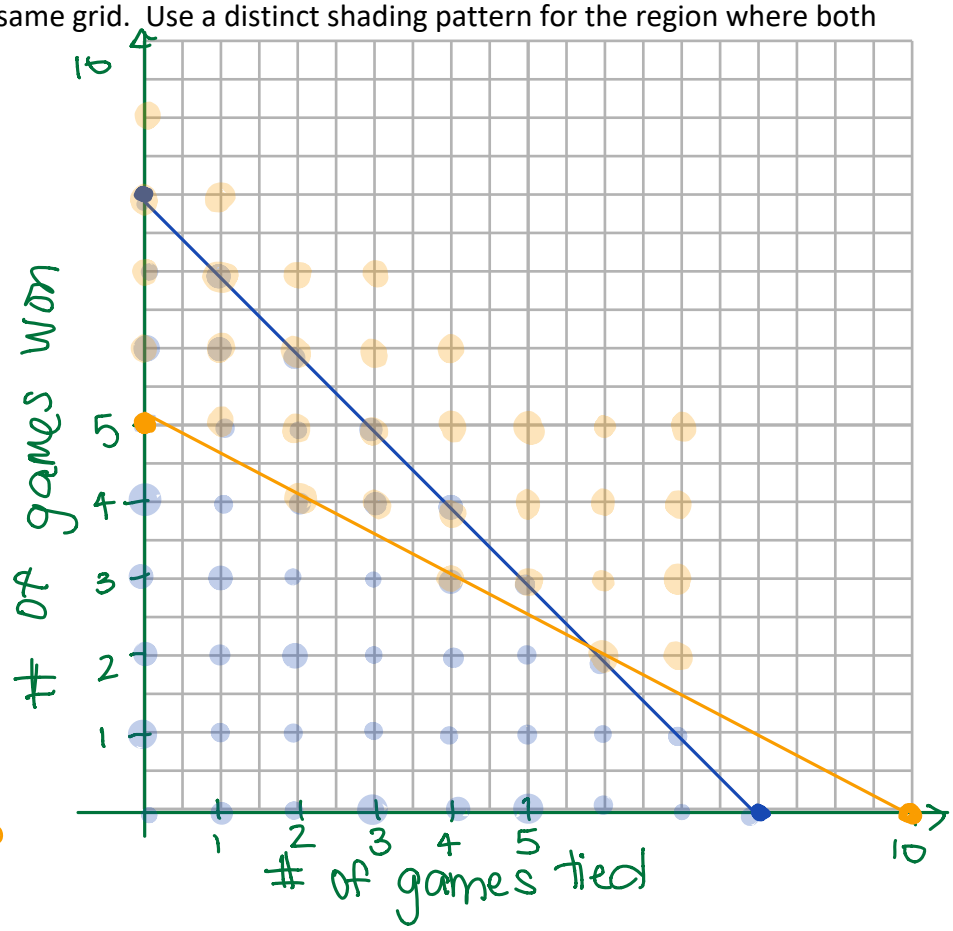
$w \geq 5$

if $w = 0$, $2(0) + t \geq 10$

$t \geq 10$

$(0,0)$ $2(0) + 0 \geq 10$

$0 \geq 10$



d. List all ordered pairs that satisfy both inequalities. Did you include any points on the boundary lines?

(t, w)

$(0,8)$

$(0,7)$ $(1,7)$

$(0,6)$ $(1,6)$ $(2,6)$

$(0,5)$ $(1,5)$ $(2,5)$ $(3,5)$

$(2,4)$ $(3,4)$ $(4,4)$

$(4,3)$ $(5,3)$

$(6,2)$

System of linear inequalities:

① Graph the first inequality (dashed or solid?)
↳ test point & shade

② Graph the second inequality (dashed or solid)
↳ test point & shade.

Assignment p.307 #1, 2 Quiz Next Day!

③ Consider only where the shaded regions

overlaps