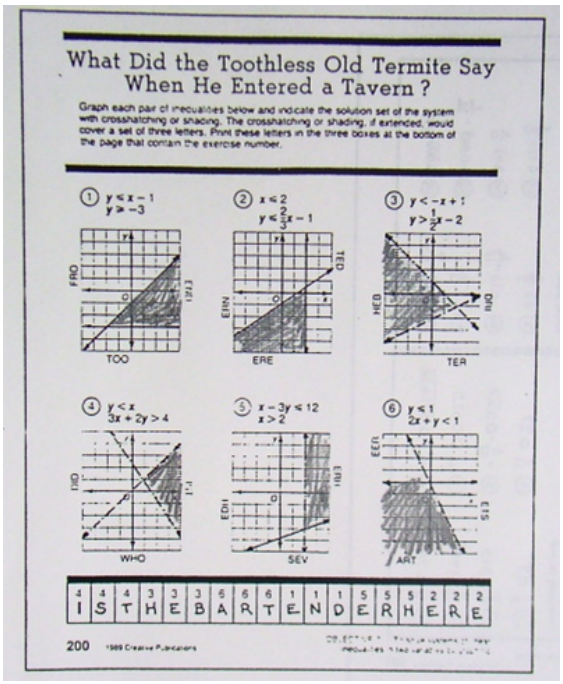
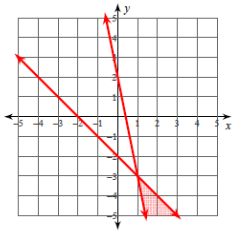
SOLUTIONS...

PUZZLE WORKSHEET:

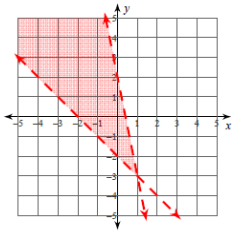


WORKSHEET:

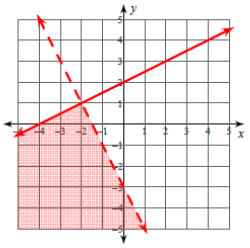
1) $y \le -x - 2$
$y \ge -5x + 2$



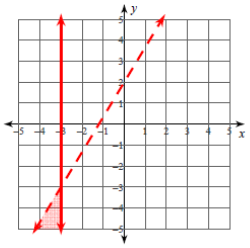
2) $y > -x - 2$
$y < -5x + 2$



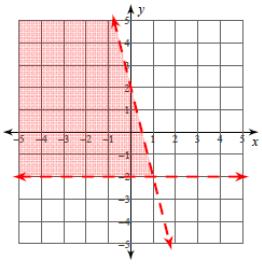
3) $y \le \frac{1}{2}x + 2$
$y < -2x - 3$



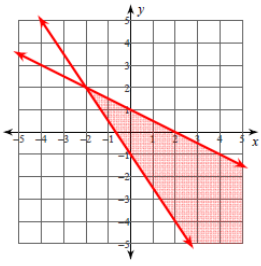
4) $x \le -3$
$y < \frac{5}{3}x + 2$



5) $4x + y < 2$
$y > -2$

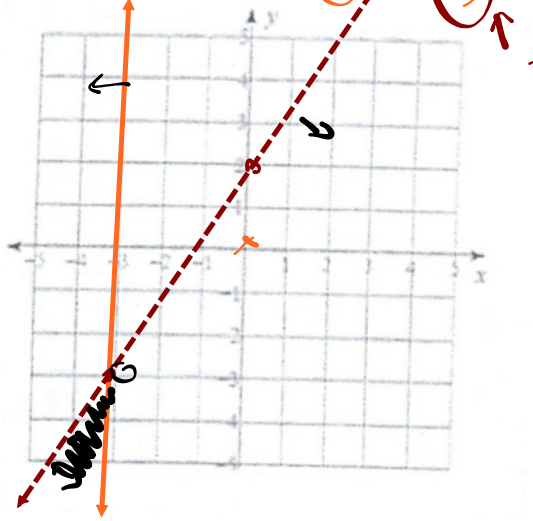


6) $3x + 2y \ge -2$
$x + 2y \le 2$



4) $x \leq -3$

$y < \frac{5}{3}x + 2$



$x \leq -3$

$y < \frac{5}{3}x + 2$

Test (0,0)

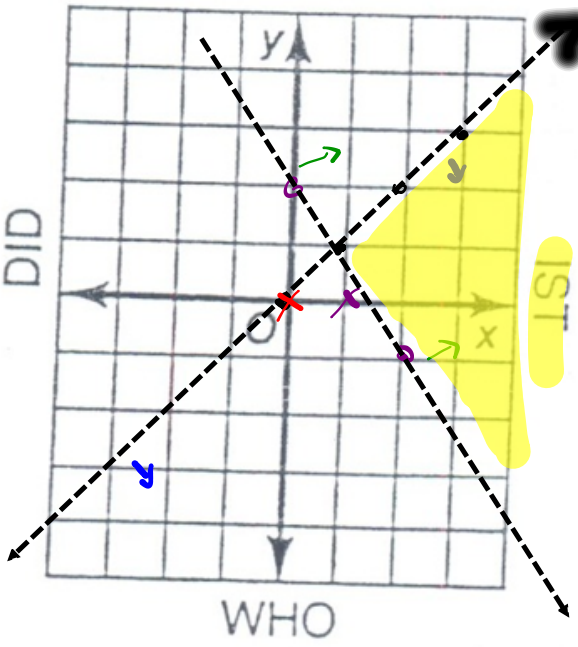
$-\frac{5}{-3}$

$x = -3$ (vertical)

$LS < RS$

0	$\frac{5(0)}{3} + 2$
	< 2 yes

4 $y < x$
$3x + 2y > 4$



Test (0,0)
LS > RS
$3(0)+2(0) \not> 4$
$0 \not> 4$ No

$y = \frac{1}{1}x$

Test (1,0)
LS < RS
$0 < 1$ Yes

$2y = -3x + 4$
$y = -\frac{3}{2}x + 2$

WARM-UP: Graph the solution and state 2 possible solutions...

$\{(x,y) \mid 2x+y>8, x\varepsilon W, y\varepsilon W\}$ Skipple Q1

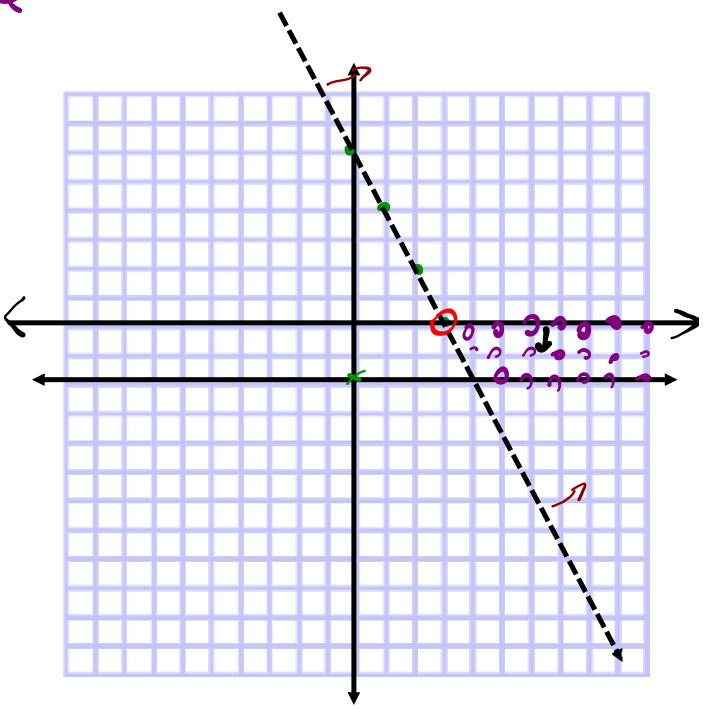
$\{(x,y) \mid y\leq 2, x\varepsilon W, y\varepsilon W\}$

$y = -2x + 8$

LS > RS

$2(3)+0$	8
0	No

$y = 2$



Applications: Systems Involving Inequalities

STEP 1 - Declare Variables
State Restrictions

STEP 2 - Create Linear Inequalities

STEP 3 - Graph Solution Set

STEP 4 - Answer question(s)

EXAMPLE #1:

To raise funds for π - day, the PI Committee has 500 T-shirts to sell.

They have two varieties:

#1. 'I 8 Sum π' or #2.'π- DAY 2018'.

They expect to sell at least twice as many of the first as the second.

a) Define the variables and restrictions. Write a system of linear inequalities that models the situation.

$x \to$ # of π day 2018 sold

$y \geq$ # of I 8 sum π sold

$x, y \in W$

$x + y = 500$

x_{int}

$x + 0 = 500$

$x = 500$

$(500, 0)$

y_{int}

$0 + y = 500$

$(0, 500)$

$y = 2x$

$x + y \leq 500$

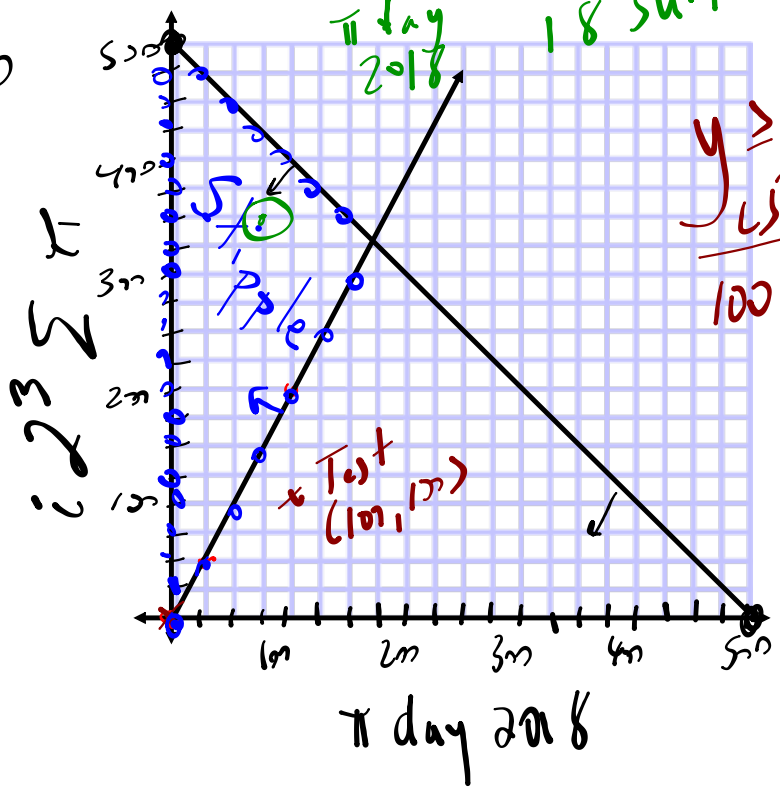
$y \geq 2x$

x	y
25	50
100	200

b) Graph the system of inequalities.

c) State a combination of T-shirt sales.

(75, 350)



$y \geq 2x$

$75 \geq 150$

100	200 ≥ 200 NO

Variables...

Independent - is plotted on the x axis

ex: time, shots on goal

Dependent - is plotted on the y axis

ex: distance, goals scored

REMEMBER... You have ID the XY

ASK YOURSELF... 'What depends on what?'

HOMEWORK...

Quiz

p. 225: #1 & 2

p. 235: #2, 5 & 6 Word problem