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. 1st depends on 2nd

Independent
↳ X variable
↳ ey: shots, time

Dependent
↳ y variable
↳ ex: goals, distance

'What depends on what?'

ex: Goals depends on shots

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

$x \rightarrow$ # of π day 2018
$y \rightarrow$ # of "I 8 Σ π"
$x \in W$ $y \in W$

"at least (2)"

b) Graph the system of inequalities.

$X + y \leq 500$
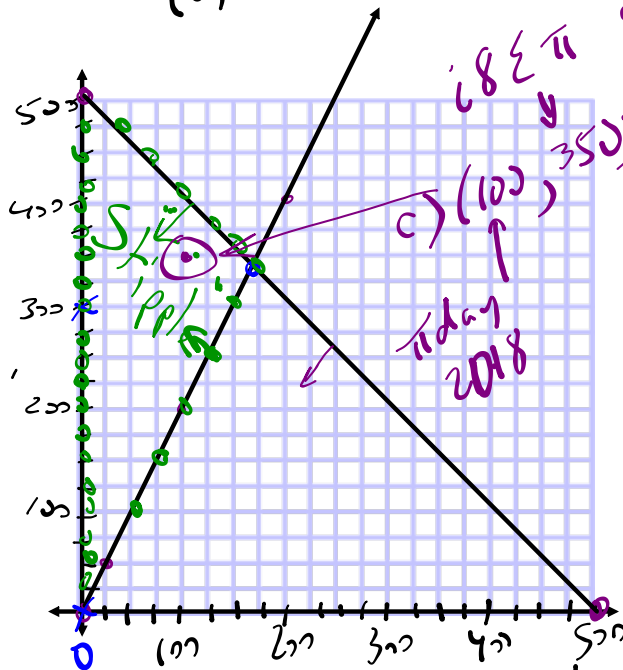$y \geq 2X$

c) State a combination of T-shirt sales.

$X + y = 500$

X-int
$X + 0 = 500$
$X = 500$
$(500, 0)$

y-int
$0 + y = 500$
$(0, 500)$

$y = 2x$

x	y
100	200
200	400

Test (0, 300)
$y \geq 2x$
$CS \geq RS$

300	2(0)

≥ 0 yes

c) (100, 350)

π day 2018

of π day 2018 shirts

i 8 Σ π shirts

QUIZ TIME - When Finished...

HOMEWORK...

p. 225: #1 & 2

p. 235: #2, 5 & 6