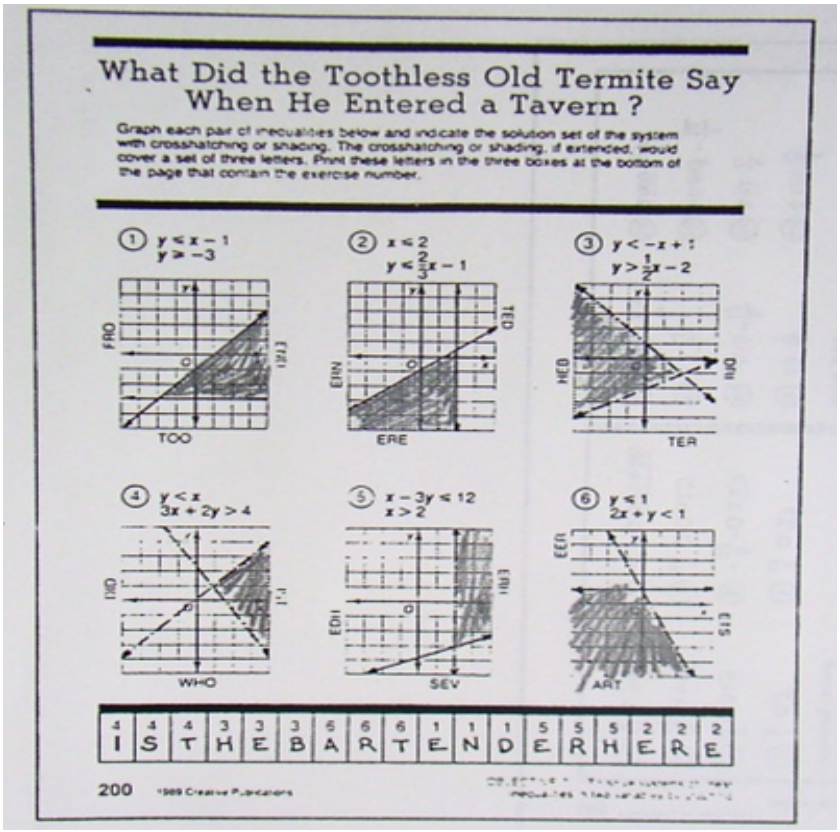
SOLUTIONS...

PUZZLE WORKSHEET:



What Did the Toothless Old Termite Say When He Entered a Tavern ?

Graph each pair of inequalities below and indicate the solution set of the system with crosshatching or shading. The crosshatching or shading, if extended, would cover a set of three letters. Print these letters in the three boxes at the bottom of the page that contain the exercise number.

① $y \leq x - 1$, $y \geq -3$ — FRO, TOO, [illegible]

② $x \leq 2$, $y \leq \frac{2}{3}x - 1$ — ERN, ERE, TED

③ $y < -x + 1$, $y > \frac{1}{2}x - 2$ — HED, TEA, ONE

④ $y < x$, $3x + 2y > 4$ — OLD, WHO, [illegible]

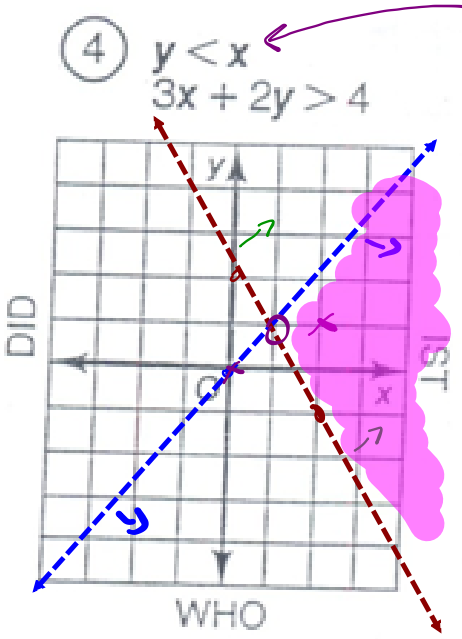
⑤ $x - 3y \leq 12$, $x > 2$ — EDI, SEV, [illegible]

⑥ $y \leq 1$, $2x + y < 1$ — EEN, ART, [illegible]

4	4	4	3	3	3	6	6	6	1	1	1	5	5	5	2	2	2
I	S	T	H	E	B	A	R	T	E	N	D	E	R	H	E	R	E

200 [illegible]

HW Questions...



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

Test (2, 1)

LS < RS

1 < 2

$3x + 2y = 4$

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

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

LS > RS

$3(0) + 2(0) \mid 4$

$0 < 10$

10. On Earth Day, a nursery sold more than $1500 worth of maple and birch trees. The maple trees were sold for $75, and the birch trees were sold for $50.
a) Define the variables and write a linear inequality to represent the possible combinations of trees sold. Are there any restrictions on the variables? Explain.
b) Graph the linear inequality.
c) Use your graph to determine:
i) if the nursery could have sold 13 of each type of tree
ii) if 14 of one type and 9 of the other type could have been sold

c) 75*13+50*13 → 1625 ↑ over yes

(13,13)

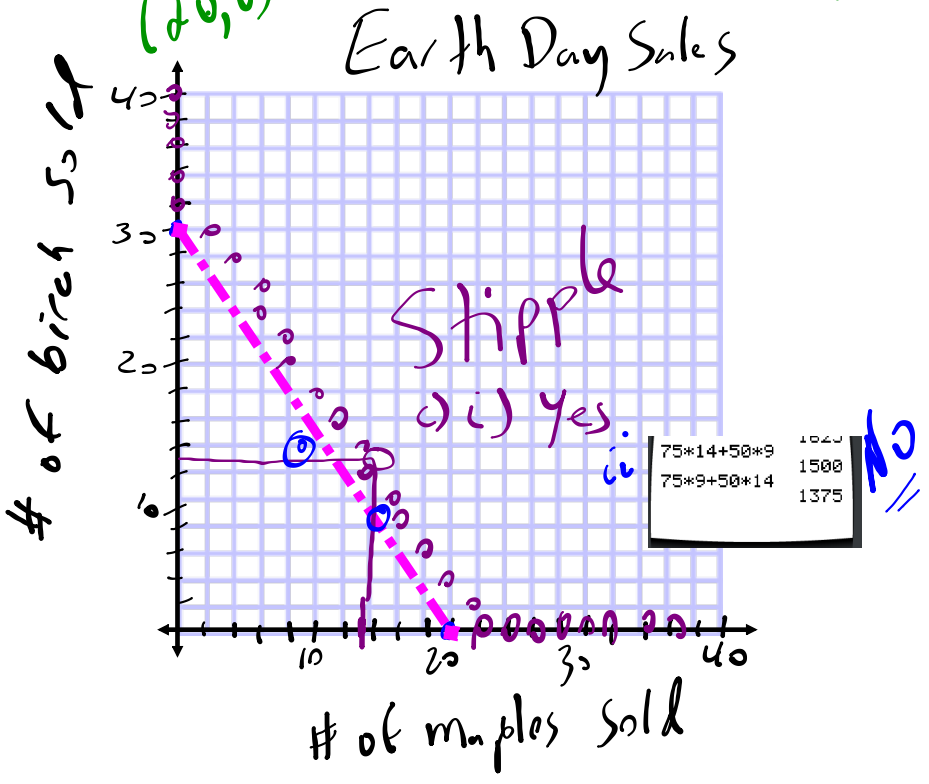
a) $x \rightarrow$ # of maple trees sold $x \geq 0$
$y \rightarrow$ # of birch trees sold $y \geq 0$

$75x + 50y > 1500$

b) $75x + 50y = 1500$

x int
$\frac{75x}{75} + \frac{50(0)}{75} = \frac{1500}{75}$
$x = 40$
(20,0)

y int
$\frac{75(0)}{50} + \frac{50y}{50} = \frac{1500}{50}$
$y = 30$
(0,30)



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

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

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

Q1

$2x+y=8$

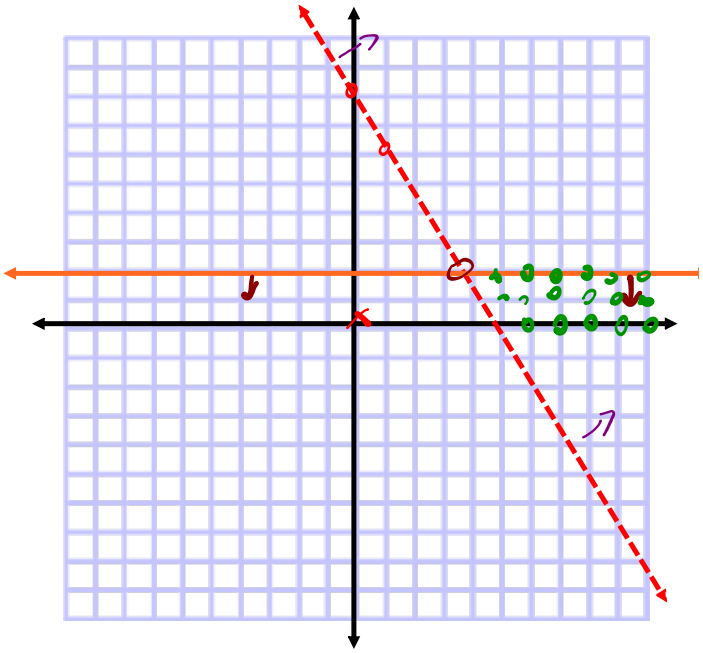
$y=-2x+8$

$y=2$

$(5,5) > 12.5$

$2(5)+0 \mid 8$

$0 \not> 8$ No



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.

y x 1st depends on 2nd

* Independent vs Dependent

What depends on what?

x → Independent
y → Dependent

shots on goal
vs
goals scored

goals depends on shots
y x

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

x → # of π day 2018 shirts
y → # of i 8 Σ π shirts
x ∈ W y ∈ W

b) Graph the system of inequalities.

$x + y \leq 500$

*at least (≥)

c) State a combination of T-shirt sales.

* Finish tomorrow

#BeccaToldMeTo