

Friday, September 23rd...PRACTICE for TEST

Questions

p. 261: #5, 7, (8), 9, 11, 12, 13

- For each word problem... 1) State Variable & Restrictions
 2) State Constraints & Objective Function
 3) Graph constraints to get feasible region
 4) Use vertices in objective function to get optimal solutions

***Whatever you do not finish in class is homework...test next week!

8. A refinery produces oil and gas.

- At least 2 L of gasoline is produced for each litre of heating oil.
- The refinery can produce up to 9 million litres of heating oil and 6 million litres of gasoline each day.
- Gasoline is projected to sell for \$1.10 per litre. Heating oil is projected to sell for \$1.75 per litre.

The company needs to determine the daily combination of gas and heating oil that must be produced to maximize revenue. Create a model to determine this combination. What would the revenue be?

Optimization Model

Let g represent the number of litres of gasoline. y axis
 Let h represent the number of litres of heating oil. x axis
 Let R represent the total revenue from sales.

Restrictions:
 $g \in \mathbb{R}, h \in \mathbb{R}$

Constraints:

$g \geq 0$
 $h \geq 0$

Quad I

$g \geq 2h$
 $g \leq 6\,000\,000$
 $h \leq 9\,000\,000$

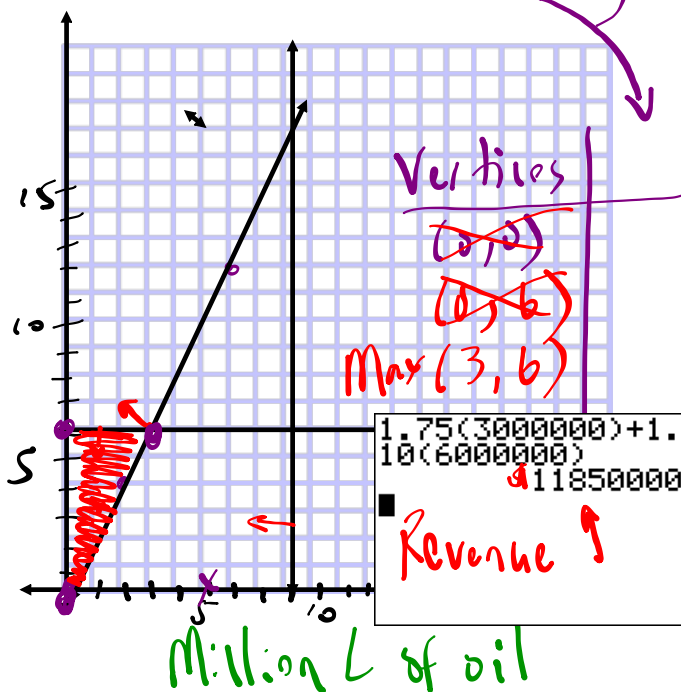
Objective function to maximize:
 $R = 1.10g + 1.75h$

$R = 1.75x + 1.10y$

gas depends on oil
 y
 x

$y \leq 6\,000\,000$
 $y \geq 2x$
 $x \leq 9\,000\,000$

Million L of gas



$y = 2x$

x	y
0	0
2	4
6	12

Test (5,0)
 $y \geq 2x$
 $0 \geq 10$ No

HOMEWORK: Test is on THURSDAY!!!

*** CHECK AND CORRECT your quiz.

Review/Practice Questions...

- p. 239: Mid-Chapter Review (Frequently Asked Questions)
- p. 241: Mid-Chapter Practice Questions
- p. 266: Chapter Review (Frequently Asked Questions)
- p. 267: Chapter Practice Questions
- p. 265: Chapter Self-Test (Do this AFTER you practice)