

1. The Canadian Motor Company makes two models of economy car, the Loon and the Moose. The company makes a profit of \$400 on each Loon that it sells and \$300 on each Moose. The labour requirements are given in the table below:

Car	Assembly	Finishing	Testing
Loon	150 h	50 h	10 h
Moose	60 h	40 h	20 h
Totals			

During each production run, there are 30 000 h available for assembly, 13 000 h for finishing and 5 000 h for testing. How many cars of each model should be made in order to maximize the profit of each production run?

a) Choose variables (x and y) for each car type: Loon: _____ Moose: _____

b) Write a constraint about assembly: _____

xint _____ yint _____

c) Write a constraint about finishing: _____

xint _____ yint _____

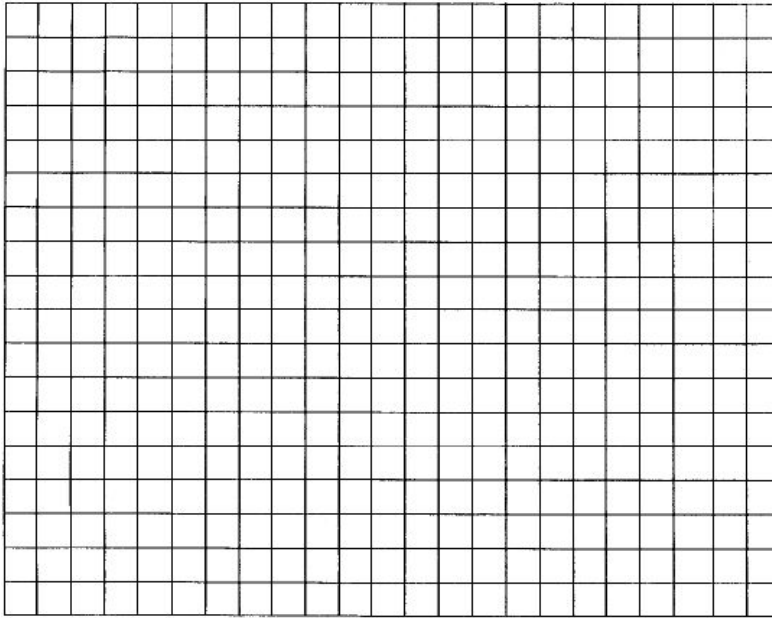
d) Write a constraint about testing: _____

xint _____ yint _____

e) Write the "objective" function about Profit: P= _____

f) Graph your constraints.

g) Show the coordinates of each vertex : A(,) B(,) C(,) D(,)



g) Use your profit function to show the profits for each feasible combination:

Point A: P=

_____ = \$ _____

Point B: P= _____ = \$ _____

Point C: P= _____ = \$ _____

Point D: P= _____ = \$ _____

Which combination of cars produces the maximum profit? _____ Loons and _____ Moose.