

## 9.3 Assignment: Part 2

1. A company manufactures two products, A and B, on two machines I and II. It has been determined that the company will realize a profit of \$3 on each unit of product A and a profit of \$4 on each unit of product B. To manufacture a unit of product A requires 6 minutes on machine I and 5 minutes on machine II. To manufacture a unit of product B requires 9 minutes on machine I and 4 minutes on machine II. The amount of machine time for machine I is 5 hours and for machine II is 3 hours for each work shift. How many units of each product should be produced in each shift to maximize the company's profit.

Fill in the table, determine if this is a maximization or minimization problem, and write the equation for the linear objective function and the constraints.

	Product A	Product B	Time Required
Machine I			
Machine II			
Profit			

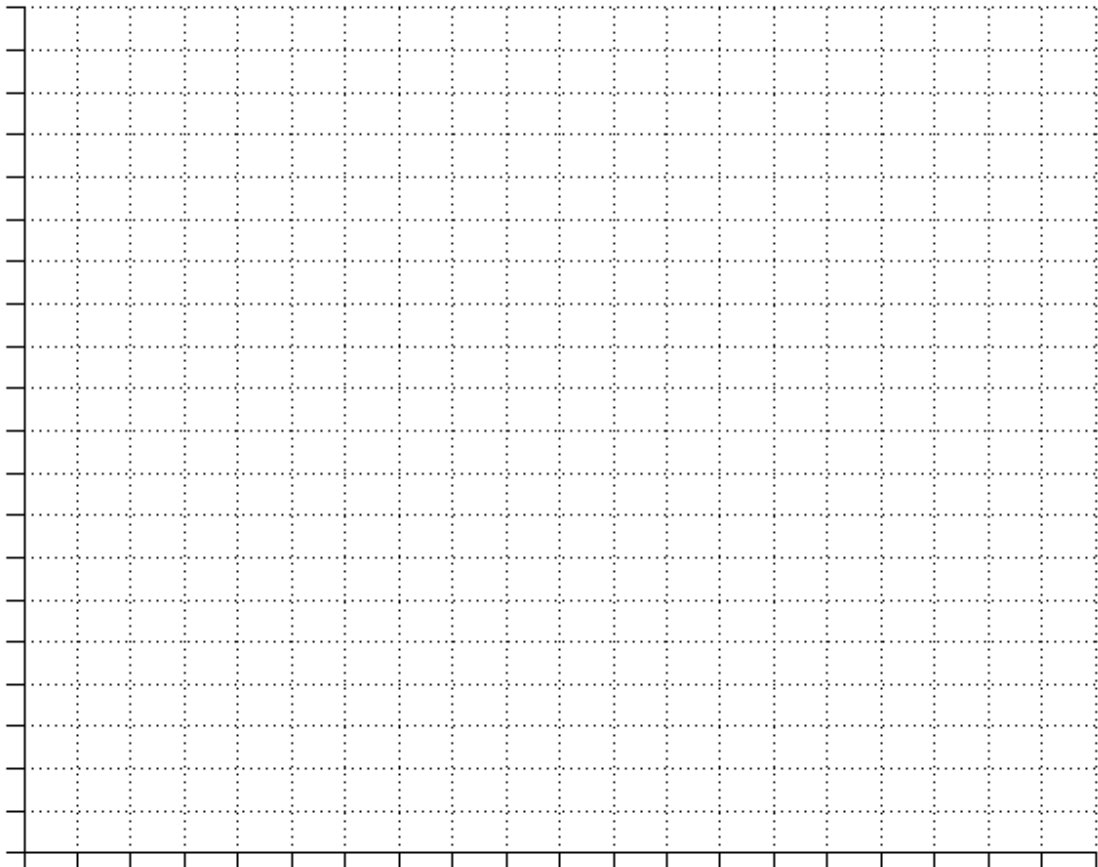
2. Custom Office Furniture Company is introducing a new line of executive desks made from a specially selected grade of walnut. Initially, the two different models – A and B – are to be marketed. Each model A requires 1.25 hours for fabrication, 1 hour for assembly, and 1 hour for finishing; each model B desk requires 1.5 hours for fabrication, 1 hour for assembly, and 1 hour for finishing. The profit on each model A desk is \$26 and the profit for a model B desk is \$28. The total time available in the fabrication department, the assembly department, and the finishing department in the first month of production is 310 hours, 205 hours, and 190 hours respectively. To maximize Custom’s profit, how many desks of each model should be made in the month?

Fill in the table, determine if this is a maximization or minimization problem, and write the equation for the linear objective function and the constraints.

	Homeowners	Automobile	Max Percent
Annual Rate			
Dept. III			
Profit			

In 3 and 4, graph the following constraints.

3.  $2x + 4y > 16$       $-x + 3y \geq 7$       $x \geq 0$       $y \geq 0$



Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

4.  $x + y \leq 4$        $2x + y \leq 6$        $2x - y \geq -1$        $x \geq 0$        $y \geq 0$

