

More Linear Programming Practice

1. A school fundraiser makes t-shirts and polo shirts to sell to school members. There is limited runtime available on specialized systems from a PTSA member's shirt business.

	T-shirts	Polo Shirts	Time Machine Available
Machine A	2 minutes	1 minute	180 minutes
Machine B	1 minute	3 minutes	300 minutes
Profit per shirt	\$3.00	\$3.60	

Determine the number of t-shirts and polo shirts that should be made to maximize profit.

2. A nursery owner has 50 acres for planting carnations and roses. She wants to plant no more than 25 acres of roses and no more than 40 acres of carnations. If the nursery makes a profit of \$1000 per acre of roses and \$800 per acre of carnations, how many acres of each flower should the nursery plant to make the maximum profit?

3. A group of students make necklaces and bracelets in their spare time and sell all that they make. Every week they have available 10,000 grams of metal and 20 hours to work. It takes 50 grams of metal to make a necklace and 200 grams of metal to make a bracelet. Each necklace takes 30 minutes to make and each bracelet takes 20 minutes. The profit on each necklace is \$3.50, and the profit on each bracelet is \$2.50. If the students want to earn as much money as possible, how many of each type of jewelry should they make each week?

4. Suppose that a farmer has no more than 50 acres for planting alfalfa and soy beans and has a maximum of \$1200 to spend on the planting. It costs \$20 per acre to plant alfalfa and \$30 per acre to plant soy beans. The profit per acre for alfalfa is \$250 and for soy beans is \$300. How much of each crop should the farmer plant?

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