# 7.3 Applications of Linear Programming

1. An office manager needs to purchase new filing cabinets. He knows that Ace cabinets cost $40 each, require 6 square feet of floor space, and hold 8 cubic feet of files. On the other hand, each Excello cabinet costs $80, requires 8 square feet of floor space, and holds 12 cubic feet. His budget permits him to spend no more than $560, while the office has room for no more than 72 square feet of cabinets. The manager desires the greatest storage capacity within the limitations imposed by funds and space. How many of each type of cabinet should he buy?

Solution:

	Number	Cost of Each	Space Required	Storage Capacity
Ace				
Excello				
Maximum Available				
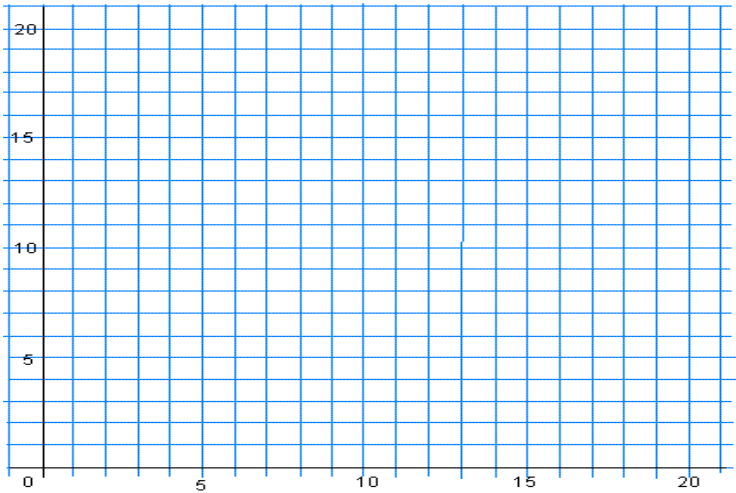
2. A chain saw requires 4 hours of assembly and a wood chipper 6 hours. A maximum of 48 hours of assembly time is available. The profit is $150 on a chain saw and $220 on a chipper. How many of each should be assembled for maximum profit?
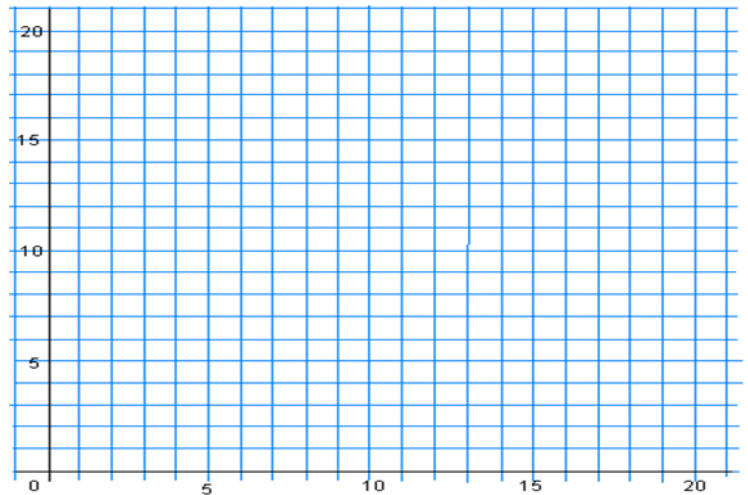
3. Mark Donovan likes to snack frequently during the day but he wants his snacks to provide at least 24 grams of protein per day. Each Snack-Pack provides 4 grams of protein, and each Minibite provides 1 gram. Snack- Pack cost 50 cents each and Minibites 12 cents. How many of each snack should he use to minimize his daily cost?