1. A small company can sell each of the knife sets it makes for $100 per set. Total cost consists of a fixed overhead of $2700 plus production costs of $40 per set.

a. Express the company's total revenue, total cost and total profit as a function of x, the number of knife sets sold. Sketch the total revenue and total cost functions on the same set of axes.

b. How many knife sets must be sold for the company to break even?

c. What is the company's profit or loss if 30 knife sets are sold? How many knife sets must be sold for the company to have a profit of $240?

2. A gardener is constructing a rectangular garden plot of 2000 square feet, and he will enclose it with fence. The fence on the north and south sides costs $7 per foot while the fence on the west and east sides costs $12 per foot. Find the function $C(x)$ that gives the cost of all of the fence to enclose the rectangle where x is the length of the north (and also of course the south) side of the garden.