# Chapter 13 – 1b Antiderivatives and Indefinite Integrals

## Some Basic Properties of Indefinite Integrals

**Example 11.** The marginal average cost of producing digital sports watches is given by

If the average cost for producing 100 digital sports watches is $25, find the average cost function and the cost function. What are the fixed costs?

 so

 so the fixed costs are $1,000.

**Example 12.** Monthly sales (computers per month) of a particular personal computer are expected to decline at the rate of

where is the time in months and is the number of computers sold per month. The company plans to stop selling this model when monthly sales reach 800 computers. If they are currently () selling 2,000 computers a month, how long will the company continue to sell this model?

 implies and

 implies months.

**Example 13.** The marginal production time (in hours of labor) to manufacture a new missile control system is given by

If it takes 19,200 labor-hours to make the first 16 units, how long will it take to make the next 16 units?

After making 16 control systems, the rate of assembly is 600 labor-hours per unit. After making 25 control systems, the rate of assembly is down to 480 hours per unit. The assembly time per unit decreases as the workers get more practice.

 implies and .

 hours.

 hours to make the second 16 units.

