

Primal Praline Company

The Primal Praline Company needs to have a working candy making machine during each of the next six years. Currently, it has a new machine. At the beginning of each year, the company may keep the machine or sell it and buy a new one. A new machine costs \$5000, and cannot be kept for more than three years. The revenues earned by a machine, the cost of maintaining it, and the salvage value that can be obtained by selling it at the end of a year depend on the age of the machine:

	Age of machine at the beginning of the year		
	0 years	1 years	2 years
Revenues	4,500	3,000	1,500
Operating costs	500	700	1,100
Salvage value at the end of year	3,000	1,800	500

The company's problem is to maximize the net profit it earns over the next six years. Formulate this problem as a shortest path problem.