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3. A tailor makes wool tweed sport coats and wool slacks. He is able to get a shipment of 150 square yards of wool cloth from Scotland each month to make coats and slacks, and he has 200 hours of his own labor to make them each month. A coat requires 3 square yards of wool and 10 hours to make, and a pair of slacks requires 5 square yards of wool and 4 hours to make. The tailor earns \$50 in profit from each coat he makes and \$40 from each pair of slacks. He wants to know how many coats and pairs of slacks to produce to maximize profit.

- a. Formulate an integer linear programming model for this problem.
- b. Determine the integer solution to this problem by using the computer. Compare this solution with the solution without integer restrictions and indicate whether the rounded-down solution would have been optimal.

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31. Globex Investment Capital Corporation owns six companies that have the following estimated returns (in millions of dollars) if sold in 1 of the next 3 years:

Company	Year Sold (estimated return, \$1,000,000s)		
	1	2	3
1	\$14	\$18	\$23
2	9	11	15
3	18	23	27
4	16	21	25
5	12	16	22
6	21	23	28

To generate operating funds, the company must sell at least \$20 million worth of assets in year 1, \$25 million in year 2, and \$35 million in year 3. Globex wants to develop a plan for selling these companies during the next 3 years to maximize return.

Formulate an integer programming model for this problem and solve it by using the computer.