3. Burger Office Equipment produces two types of desks, standard and deluxe. Deluxe desks have oak tops and more-expensive hardware and require additional time for finishing and polishing. Standard desks require 80 board feet of pine and 10 hours of labor, whereas deluxe desks require 60 board feet of pine, 18 square feet of oak, and 16 hours of labor. For the next week, the company has 5,000 board feet of pine, 750 board feet of oak, and 400 hours of labor available. Standard desks net a profit of $150, and deluxe desks net a profit of $320. All desks can be sold to national chains such as Staples or Office Depot.

a. Identify the decision variables, objective function, and constraints in simple verbal statements.

b. Mathematically formulate a linear optimization model.

4. A business student has $2,500 available from a summer job and has identified three potential stocks in which to invest. The cost per share and expected return over the next 2 years is given in the table.

Stock	A	B	C
Price/share	$25	$15	$40
Return/share	$12	$7	$12

a. Identify the decision variables, objective function, and constraints in simple verbal statements.

b. Mathematically formulate a linear optimization model.