

Kazak Film Company

The Kazak Film Company produces large stocks of rolls, which are then cut to produce roll lengths ordered by customers. To satisfy next week's orders, the company needs to cut 15 long rolls and 10 short rolls of film from stock pieces. Each stock piece can be cut in one of two patterns. The first produces 5 long and 2 short rolls; the second yields 3 long and 5 short. Once a stock is cut, anything that remains is scrap. Also, neither pattern should be used more than 4 times because the jig used to cut it will become too inaccurate. Kazak wants to find the combination of patterns to be used to minimize the number of stock pieces required while meeting the demand. Formulate a mathematical model to decide what patterns to use. Solve the model graphically.