Truck leasing assignment

Business

CASE PROBLEM 3 : TRUCK LEASING STRATEGY From the information given, let X = number of trucks obtained from a short term lease in months Y = number of trucks obtained from the long term lease The monthly fuel costs are $100, and current trucks available are 20. Make the total monthly fuel costs of $2, 000. Length of lease| Cost per month ($)| 1| 4, 000| 2| 3, 700| 3| 3, 225| 4| 3, 040| The monthly costs for short term leased trucks are as follow, the calculation below include the $2, 000 monthly cost of fuel. $4, 000 + $2, 000 = $6, 000 ($3, 700) + $2, 000 = $9, 400 3 ($3, 225) + $2, 000 = $11, 675 4 ($3, 040) + $2, 000 = $14, 160 The long term leasing contract with PennState has a monthly cost of $600 per truck. Reep Construction pays its truck drivers $20 per hour and daily fuel costs are approximately $100 per truck. Bob estimates each truck used on the new project will be operating eight hours a day, five days a week for approximately four weeks each month. Hence, each month they consume $20 (8x5x4) + $100 (y) + $600 (y) = $3, 200 + $700y

While the firm currently has 20 trucks of the type needed to perform the work on the new project, however, most of these trucks are currently being used on existing jobs. So, Bob Reep the founder and president of Reep Construction, estimated the trucks available as follow Month| Number of trucks available| 1| 1| 2| 2| 3| 4| 1| 1. The optimal leasing plan So, in minimizing cost, Bob is recommended to take long term lease because it provides less cost compared to short term lease contract.

MIN TOTAL COST $6, 000×1 + $9, 400×2 + $11, 675×3 + $14, 160×4 + $3, 200 + $700y Y1 < 1 Y2 < 2 Y3 < 3 Y4 < 1 X1 + y1 = 10 X2 + y2 = 12 x3 + y3 = 14 x4 + y4 = 8 2. The costs associated with the optimal leasing plan.

The optimal leasing plan will be, $6, 000 (9) + $3, 200 + $700 (1) = $57, 900 $9, 400 (10) + $3, 200 + $700 (2) = $98, 600 $11, 675 (11) + $3, 200 + $700 (3) = $133, 725 $14, 160 (7) + $3, 200 + $700 (1) = $103, 020 Hence, the total cost associates with leasing plan is $57, 900 + $98, 600 + $133, 725 + $103, 020 = $393, 245. . The cost for Reep Construction to maintain its current policy of no layoffs. If the firm cut the cost $3, 200 of truck driver, the total cost will be $6, 000 (9) + $700 (1) = $54, 700 $9, 400 (10) +$700 (2) = $95, 400 $11, 675 (11) + $700 (3) = $130, 525 $14, 160 (7) +$700 (1) = $99, 820 And the new total cost is $54, 700 + $95, 400 + $130, 525 + $99, 800 = $380, 465. Thus, if Reep maintains their current policy of no layoffs they will incur an additional cost of $393, 245 – $380, 445 = $12, 800.