I pledge on my honor that I have not given or received any unauthorized assistance on this

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the Internet or any other source except where I have expressly cited the source.

Signature: Kanika Yadav

Date: 09/15/2022

**Topic name -**

Name - Kanika Yadav

Date: September 15, 2022

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**Management Overview**

1. **Problem Statement:**

To find optimal solution using the Solver to find the best possible solution to the given problem considering the constraints.

Q . In PC Tech’s product mix problem, assume there is another PC model, the VXP, that the company can produce in addition to Basics and XPs. Each VXP requires eight hours for assembling, three hours for testing, $275 for component parts, and sells for $560. At most 50 VXPs can be sold.

* 1. Modify the spreadsheet model to include this new product, and use Solver to find the optimal product mix.
  2. You should find that the optimal solution is not integer-valued. If you round the values in the chang- ing cells to the nearest integers, is the resulting solution still feasible? If not, how might you obtain a feasible solution that is at least close to optimal?

1. **Data Sources**

Existing question dataset from the Q2. Of 4th edition of Textbook- “Practical Management Science (Wayne L. Winston, S. Christian Albright) (z-lib.org)[40]”

1. **Model Approach**

* Listing all the Input parameters
* Give range names to hours available, hours used, maximum sakes, number to produce and total profits namely
* Define the Unit margins
* Define the changing cells i.e. the number to produce as part of the solver to solution
* Define formula for Labor hours used using SUMPRODUCT
* Calculate Net Profits

1. **Solution & Sensitivity Analysis**

Using Solver, we set the Objective target to maximize the total profits,

Define two constraints – hours used <= hours available

And number to produce <= maximum sales

We use Simplex Method to get a solution to evaluate the number to produce values

Clicking on Solve gives us the resultant optimal solution to the given problem and constraints.

1. **Conclusion –**

The solution observed as a resultant of the solver is in decimals if rounded upto a nearest decimal the solution is not feasible. Hence minimum of the decimal value should be good to count for the numbers of items to produce.