HW assignment #6

Part 1: Classwork

Follow the videos and submit your spreadsheet solution to:

- The spinners case
- Simplico mine case

Part 2: Health claims

A large manufacturing co claims. That means the company collects a fixed amount each month from every employee for health care costs and then pays the entire claim amounts using its own funds to make up the difference. The company would like to estimate its total health care payments for the coming year. The total number of employees at the start of the year is 11,124. The firm expects the number of employees to change each month over the coming year by a percentage that is u ween 2 percent and 5 percent. Employees contribute $25 each per month e costs, while the average claim is $250 per month. The average claim it by an amount given by a normal dis eviation of 2 percent.

Use Monte Carlo sim large amount of scenarios (at least 30 ach scenario should contain prediction of change in number of employees and prediction of change in claims (in $) in the next 11 months.

a. What is the expected cost to the company of c h care costs in the coming year?
b. What is the maximum cost to the company of covering employee health care costs in the coming year? In other words – what is the worst case scenario?
c. What is the probability that costs will not exceed $20 million?

Source: Powell, Stephen G.. Business Analytics: The Art of Modeling With Spreadsheets, 5th Edition (p. 429).

Part 3: Syntex case

Read the case “Syntex laboratories A”. The case can be purchase via the link: https://hbsp.harvard.edu/import/651178 (this is the same link you used to purchase the case “Timeshare exchange”. If you already purchased the entire pack that included the Syntex laboratories A case, you do not need to purchase it again). We will work on this case in class in our last meeting on Oct 17.

Answer the following questions:

1. How is demand modeled in the Syntex case?
2. What lever does the company have to change the demand? Would the change in demand be linear or non-linear?
3. Let
    - r be the number of representatives you are planning to assign to sell a product
    - R be the number of representatives currently assigned to sell same product
    - S be the current annual sales volume in $ for the product
    - m be the pr
    - w be the an
    - AdBadge is in % relaitvely to the current).

   Write down the equation for calculating net profit in $ from a product for a given number of assigned representatives. Be careful about the product input and output units of the product response function.