Matrices Word Problems

1. The student council is selling flowers for mother's day. They bought 200 roses for $1.67 each, 150 daffodils for $1.03 each and 100 orchids for $2.59 each. They sold the roses for $3.00 each, the daffodils for $2.25 each and the orchids for $4.50 each.
    a) Organize the data in two matrices, and use matrix multiplication to find the total amount spent of the flowers.
    b) Write two matrices, and use matrix multiplication to find the total amount the student council received for the flower sale.
    c) Use matrix operations to find how much money the student council made on the project.

2. A hardware store sells hammers for $3.00, Flashlights for $5, and Lanterns for $7.00. Store A sold 10 hammers, 2 flashlights and 2 lanterns. Store B sold 9 hammers, 14 flashlights and 5 lanterns. Store C sold 8 hammers, 6 flashlights and 7 lanterns.
    a) Create a matrix for the Prices and a separate one for the Number of Items sold per store.
    b) Find the product of the two matrices and explain in complete sentences what the product of the two matrices represents.
    c) How would you find the total gross revenue from all three stores?
    d) Find the total gross revenue from the flashlights sold at all three stores.

For each corresponding problem, you are given a set of matrices. Pick the correct ones to answer each question part per problem.

1. $\begin{bmatrix} 200 & 150 & 100 \end{bmatrix}$ $\begin{bmatrix} 3.00 \\ 2.25 \\ 4.50 \end{bmatrix}$ $\begin{bmatrix} 1.67 \\ 1.03 \\ 2.59 \end{bmatrix}$

2. $\begin{bmatrix} 3 & 5 & 7 \end{bmatrix}$ $\begin{bmatrix} 10 & 9 & 8 \\ 2 & 14 & 6 \\ 2 & 5 & 7 \end{bmatrix}$