ASSIGNMENT-1

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1 Question:-

The bookshop of a particular school has 10 dozen chemistry books, 8 dozen physics books, 10 dozen economics books. Their selling prices are ₹80, ₹60 and ₹40 each respectively. Find the total amount the bookshop will receive from selling all the books using matrix algebra.

2 Solution:-

No of chemistry books =10 dozen= 10*12 = 120
No of physics books = 8 dozen = 8*12 = 96
No of economics books = 10 dozen = 10*12=120
Let matrix A denote the no of books per subject.

$$A = \begin{bmatrix} 120 & 96 & 120 \end{bmatrix} \tag{1}$$

Let matrix B denote the selling price of books per subject.

$$B = \begin{bmatrix} 80 \\ 60 \\ 40 \end{bmatrix} \tag{2}$$

Now,
Total amount the shopkeeper receives = No of books * Selling Price = AB =

$$\begin{bmatrix} 120 & 96 & 120 \end{bmatrix} * \begin{bmatrix} 80 \\ 60 \\ 40 \end{bmatrix} \tag{3}$$

=

$$\left[120 * 80 + 96 * 60 + 120 * 40\right] \tag{4}$$

=120*80 + 96*60 + 120*40= 9600 + 5760 + 4800=

20160

Hence,total amount received by shopkeeper is ₹20160