Determine the dimensions of each matrix product.

1. $A_{2 \times 3} \cdot B_{3 \times 5}$
2. $A_{4 \times 7} \cdot B_{7 \times 1}$
3. $A_{2 \times 2} \cdot B_{3 \times 2}$

For 4~10, use the given matrices below to find the product, if possible.

$$
\begin{gathered}
A=\left[\begin{array}{cc}
7 & -2 \\
-1 & 0
\end{array}\right] \quad B=\left[\begin{array}{cc}
3 & 7 \\
-2 & 4
\end{array}\right] \quad C=\left[\begin{array}{cc}
1 & -5 \\
-3 & 2
\end{array}\right] \quad D=\left[\begin{array}{ccc}
2 & -3 & 1 \\
4 & 2 & -1 \\
-2 & 3 & -3
\end{array}\right] \\
E=\left[\begin{array}{ccc}
4 & 3 & 1 \\
-2 & -1 & -1
\end{array}\right] \quad F=\left[\begin{array}{ccc}
6 & 5 & -2 \\
2 & 4 & -1 \\
3 & 1 & 4
\end{array}\right]
\end{gathered}
$$

4. AB
5. CE
6. -2 (FD)
7. EB
8. $\mathrm{A}^{2}$

Show the matrices you set up to following matrix multiplication word problems. You may use a calculator on these.
8. On two days, a store sold the following amounts of pencils, erasers, and binders.

|  | Pencils | Erasers | Binders |
| :--- | :---: | :---: | :---: |
| Monday | 48 | 7 | 9 |
| Tuesday | 54 | 10 | 6 |

If the price for each pencil, eraser, and binder, respectively, is $\$ 0.20, \$ 0.35$, and $\$ 2.85$, how much was made each day?
9. Old MacDonald has 3 fruit farms. On these he grows peaches, apricots, plums and apples. When he picked the fruit is sorted into layered boxes in which they will be sold. The chart below shoes the number of boxes for each type of fruit.

| Location | Peaches | Apricots | Plums | Apples |
| :---: | :---: | :---: | :---: | :---: |
| Farm 1 | 152 | 225 | 395 | 277 |
| Farm 2 | 236 | 183 | 245 | 183 |
| Farm 3 | 95 | 132 | 0 | 285 |

Suppose he sells peaches for $\$ 27$ a box, apricots for $\$ 15$ a box, plums for $\$ 34$ a box, and apples for $\$ 17$ a box. Find the income for each farm. How much will he make total?
10. In a three team track meet, the following numbers of $1^{\text {st }}, 2^{\text {nd }}$, and $3^{\text {rd }}$ place finishes were recorded.

| School | lst Place | 2nd Place | 3rd Place |
| :---: | :---: | :---: | :---: |
| Lee | 4 | 10 | 6 |
| Central | 7 | 6 | 9 |
| Clarke | 8 | 3 | 4 |

If 5 points are award for $1^{\text {st }}$ place, 3 points for $2^{\text {nd }}$, and 1 point for $3^{\text {rd }}$, determine who won the track meet.

