

Practice w/ Matrix Multiplication

Multiply the following matrices together:

$$1. \begin{bmatrix} 3 & -2 \\ 4 & 4 \\ 6 & 5 \end{bmatrix} \begin{bmatrix} 4 & 2 & 8 & 10 \\ 6 & 7 & 9 & 12 \end{bmatrix}$$

$$2. \begin{bmatrix} 2 & 3 & p \\ -4 & 6 & 10 \end{bmatrix} \begin{bmatrix} 1 & -2 \\ 4 & 8 \\ 5 & 9 \end{bmatrix}$$

$$3. \begin{bmatrix} 1 & 8 & 3 & 7 \\ 5 & 7 & 9 & 10 \end{bmatrix} \begin{bmatrix} 1 & 7 & 5 & 0 & 4 \\ 10 & 12 & -7 & 6 & 0 \\ 3 & 8 & 5 & 9 & 2 \end{bmatrix}$$

$$4. \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} 3 & -11 & 14 & 10 \\ 2 & 8 & 9 & 15 \end{bmatrix}$$

Find the value of the variable

$$5. \begin{bmatrix} 2 & p \\ -1 & 4 \end{bmatrix} \begin{bmatrix} 3 & 9 \\ 1 & 6 \end{bmatrix} = \begin{bmatrix} 14 & 66 \\ 1 & 15 \end{bmatrix}$$

$$6. \begin{bmatrix} x+2 & 10 \\ -4 & -5 \end{bmatrix} \begin{bmatrix} 8 & 3 & 9 \\ -2 & x-5 & 0 \end{bmatrix} = \begin{bmatrix} 44 & 34 & 72 \\ -22 & -17 & -36 \end{bmatrix}$$

7. The Skyline Development Group operated two ski resorts. On a certain day, Powderline resort rented 68 sets of ski equipment, and sold 280 half-day lift tickets and 674 full-day lift tickets. High Ridge resort rented 125 sets of equipment, and sold 452 and 1020 half- and full-day tickets, respectively. At each resort, the cost of renting equipment is \$18, and the half- and full-day tickets are \$19 and \$25, respectively. Show how you would use matrix multiplication to find the total amount of money made on these items at each resort for this day.