

LESSON 39: Matrices

.....
Homework

1. Simplify:

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

A. $\begin{bmatrix} 0.5 & 3.5 & 6.5 & 4.5 \\ 1.5 & 8.5 & 5.5 & 3.5 \\ 10.5 & 7.5 & 9.5 & 2.5 \end{bmatrix}$

B. $\begin{bmatrix} 0 & 1.5 & 3 & 2 \\ 0.5 & 4 & 2.5 & 1.5 \\ 5 & 3.5 & 4.5 & 1 \end{bmatrix}$

C. $\begin{bmatrix} 0 & 6 & 12 & 8 \\ 2 & 16 & 10 & 6 \\ 20 & 14 & 18 & 4 \end{bmatrix}$

D. $\begin{bmatrix} -0.5 & 2.5 & 5.5 & 3.5 \\ 0.5 & 7.5 & 4.5 & 2.5 \\ 9.5 & 6.5 & 8.5 & 1.5 \end{bmatrix}$

2. A local music store buys and sells used CDs, DVDs and VHS tapes. Matrix H represents the average amount the store pays someone for their items where Matrix D represents the average amount for which the store sells the same items.

$$\begin{array}{ccc} \text{CD} & \text{DVD} & \text{VHS} \\ H & \begin{bmatrix} 3 & 7 & 2 \end{bmatrix} & \begin{array}{ccc} \text{CD} & \text{DVD} & \text{VHS} \\ D & \begin{bmatrix} 9 & 14 & 5 \end{bmatrix} \end{array} \end{array}$$

Which of the following represents the total profit per item?

A. $\begin{bmatrix} 12 & 21 & 7 \end{bmatrix}$

B. $\begin{bmatrix} -6 & -7 & -3 \end{bmatrix}$

C. $\begin{bmatrix} 6 & 7 & 3 \end{bmatrix}$

D. $\begin{bmatrix} 3 & 2 & 2.5 \end{bmatrix}$

3. Simplify:

$$\begin{bmatrix} 33 & 12 & 28 \\ 50 & 47 & 19 \end{bmatrix} + \begin{bmatrix} 15 & 2 & 20 \\ 31 & 25 & 8 \end{bmatrix}$$

A. $\begin{bmatrix} 88 & 59 & 47 \\ 46 & 27 & 28 \end{bmatrix}$

B. $\begin{bmatrix} 18 & 10 & 8 \\ 19 & 22 & 11 \end{bmatrix}$

C. $\begin{bmatrix} 48 & 14 & 48 \\ 50 & 47 & 19 \end{bmatrix}$

D. $\begin{bmatrix} 48 & 14 & 48 \\ 81 & 72 & 27 \end{bmatrix}$

LESSON 39: Matrices

Homework

.....

4. The following matrix shows the summer months' income of Deon's business experienced in the first two years of operation.

	May	June	July
2005	\$270,000	\$300,000	\$360,000
2006	\$285,000	\$315,000	\$390,000

What was the total change in income for Deon between the three months of 2005 and the three months in 2006?

- A. \$1,920,000 increase in income
 B. \$60,000 increase in income
 C. \$60,000 decrease in income
 D. \$30,000 decrease in income

5. Students at Mack Middle School attended an after school festival. At the refreshments booth a variety of candies were offered. Students were surveyed after they made a purchase. They were asked if they had more money to spend, which type of candy would they buy next. The results of the survey are as follows:

Type of candy purchased	Type of candy students would purchase
Chocolate (C)	Chocolate (C) 35% Chewy (W) 40% Hard (H) 25%
Chewy (W)	Chewy (W) 20% Hard (H) 40% Chocolate (C) 40%

Which matrix represents the data?

A. $\begin{matrix} \mathbf{W} \\ \mathbf{C} \end{matrix} \begin{matrix} \mathbf{H} & \mathbf{C} & \mathbf{W} \\ \begin{bmatrix} 40\% & 40\% & 20\% \\ 25\% & 35\% & 40\% \end{bmatrix} \end{matrix}$

B. $\begin{matrix} \mathbf{W} \\ \mathbf{C} \end{matrix} \begin{matrix} \mathbf{H} & \mathbf{C} & \mathbf{W} \\ \begin{bmatrix} 35\% & 40\% & 25\% \\ 20\% & 40\% & 40\% \end{bmatrix} \end{matrix}$

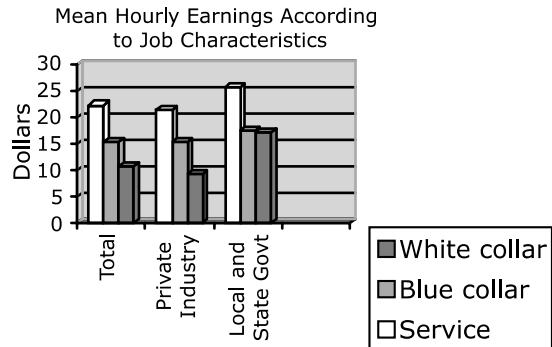
C. $\begin{matrix} \mathbf{W} \\ \mathbf{C} \end{matrix} \begin{matrix} \mathbf{H} & \mathbf{C} & \mathbf{W} \\ \begin{bmatrix} 20\% & 40\% & 40\% \\ 35\% & 40\% & 25\% \end{bmatrix} \end{matrix}$

D. $\begin{matrix} \mathbf{W} \\ \mathbf{C} \end{matrix} \begin{matrix} \mathbf{H} & \mathbf{C} & \mathbf{W} \\ \begin{bmatrix} 25\% & 35\% & 40\% \\ 40\% & 40\% & 20\% \end{bmatrix} \end{matrix}$

LESSON 39: Matrices

Homework

The graph to the right gives information on the mean hourly rate of persons in the United States working in private industry (excluding private households, agriculture and the federal government) according to the U.S. Census Bureau in 1994.



6. Which of the following matrices correctly summarizes the data?

A.
$$\begin{matrix} & \mathbf{G} & \mathbf{P} & \mathbf{T} \\ \mathbf{S} & 10.65 & 9.12 & 17.06 \\ \mathbf{B} & 15.46 & 15.34 & 17.59 \\ \mathbf{W} & 22.34 & 21.53 & 25.73 \end{matrix}$$

B.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{W} & 10.65 & 9.12 & 17.06 \\ \mathbf{B} & 15.46 & 15.34 & 17.59 \\ \mathbf{S} & 22.34 & 21.53 & 25.73 \end{matrix}$$

C.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{S} & 17.06 & 9.12 & 10.65 \\ \mathbf{B} & 15.46 & 22.34 & 17.59 \\ \mathbf{W} & 15.34 & 21.53 & 25.73 \end{matrix}$$

D.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{S} & 10.65 & 9.12 & 17.06 \\ \mathbf{B} & 15.46 & 15.34 & 17.59 \\ \mathbf{W} & 22.34 & 21.53 & 25.73 \end{matrix}$$

7. Assuming all employees are full-time (40 hours per week), what are the average weekly wages according to the matrix above?

A.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{S} & 426 & 364.8 & 682.4 \\ \mathbf{B} & 618.4 & 1029.2 & 703.6 \\ \mathbf{W} & 893.6 & 861.2 & 613.6 \end{matrix}$$

B.
$$\begin{matrix} & \mathbf{G} & \mathbf{P} & \mathbf{T} \\ \mathbf{S} & 426 & 364.8 & 682.4 \\ \mathbf{B} & 618.4 & 613.6 & 703.6 \\ \mathbf{W} & 893.6 & 861.2 & 1029.2 \end{matrix}$$

C.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{S} & 426 & 364.8 & 682.4 \\ \mathbf{B} & 618.4 & 613.6 & 703.6 \\ \mathbf{W} & 893.6 & 861.2 & 1029.2 \end{matrix}$$

D.
$$\begin{matrix} & \mathbf{T} & \mathbf{P} & \mathbf{G} \\ \mathbf{W} & 426 & 364.8 & 682.4 \\ \mathbf{B} & 618.4 & 613.6 & 703.6 \\ \mathbf{S} & 893.6 & 861.2 & 1029.2 \end{matrix}$$

LESSON 39: Matrices

Homework

-
- 8.** What is the value of the element located in r_2c_3 of the resultant matrix of $3B - A$?

$$A = \begin{bmatrix} -1 & 5 & 3 & 9 \\ 8 & -3 & 5 & 1 \end{bmatrix}$$

$$B = \begin{bmatrix} -4 & 8 & 1 & 0 \\ 5 & 2 & -1 & 3 \end{bmatrix}$$

- A. -8 B. 2
C. 8 D. 16
- 9.** Simplify:

$$\begin{bmatrix} -3 & 6 \\ 1 & 2 \end{bmatrix} + \begin{bmatrix} 6 & -4 \\ -7 & 2 \end{bmatrix} =$$

- 10.** Simplify:

$$2 \begin{bmatrix} -5 & 9 \\ 0 & -3 \end{bmatrix} - \begin{bmatrix} -2 & 5 \\ -7 & 4 \end{bmatrix} =$$