

Algebra Lab 2.4: Matrix Math

Sales Analysis at Fred's Footwear

Name _____

Date _____ Period _____



Materials: Paper, Pencil, Calculator, (optional) Graph Paper or Spreadsheet Software



Key Learning: Learn the fundamentals of matrix addition, subtraction and scalar multiplication by performing a simulated business sales analysis.



Guided Directions



this is a
PAIRS
ACTIVITY

Fred's Footwear has three locations in Morristown, *The Green*, *The Heights* and *The Plains*. Each store has three departments: 1) Dress Shoes, 2) Casual Shoes, and 3) Sneakers. Fred has requested that the managers of the three stores to report their monthly sales data for June, July, and August by department using a data table (also known as a matrix).

N.B. The bracket symbols are commonly used in mathematics to represent a SET of numbers, such as a table or matrix.

- Use the RAW sales data below to complete the matrix for each store on the Matrix Worksheet.
- Combine the data from the individual stores into matrix $[C]$. This is often called a consolidated matrix.
- Fred feels that his new marketing campaign could increase his overall sales by 20%. Use matrix $[C']$ (pronounced "C-prime", which means that this is a variation of matrix C) showing all of the sales data increased by 20% "across the board."

RAW Sales Data by Month/Department:

<i>The Green</i>	June/Dress Shoes \$3,200; June/Casual Shoes; \$5,000; June/Sneakers \$6,100 July/Dress Shoes \$4,200; July/Casual Shoes; \$5,000; July/Sneakers \$4,000 Aug/Dress Shoes \$5,800; Aug/Casual Shoes; \$7,800; Aug/Sneakers \$8,200
<i>The Heights</i>	June/Dress Shoes \$3,500; June/Casual Shoes; \$4,500; June/Sneakers \$6,200 July/Dress Shoes \$3,800; July/Casual Shoes; \$5,300; July/Sneakers \$3,400 Aug/Dress Shoes \$5,500; Aug/Casual Shoes; \$7,700; Aug/Sneakers \$8,400
<i>The Plains</i>	June/Dress Shoes \$2,700; June/Casual Shoes; \$4,200; June/Sneakers \$5,300 July/Dress Shoes \$3,600; July/Casual Shoes; \$4,900; July/Sneakers \$3,200 Aug/Dress Shoes \$5,500; Aug/Casual Shoes; \$7,100; Aug/Sneakers \$7,800

Matrix Worksheet

Name _____

Matrix [G]	<i>Fred's Footwear – The Green</i>			
	June	July	August	Sub-total
Dress Shoes				
Casual Shoes				
Sneakers				
Sub-total				

Matrix [H]	<i>Fred's Footwear – The Heights</i>			
	June	July	August	Sub-total
Dress Shoes				
Casual Shoes				
Sneakers				
Sub-total				

Matrix [P]	<i>Fred's Footwear – The Plains</i>			
	June	July	August	Sub-total
Dress Shoes				
Casual Shoes				
Sneakers				
Sub-total				

Matrix [C]	<i>Fred's Footwear – Combined Store Sales</i>			
	June	July	August	Sub-total
Dress Shoes				
Casual Shoes				
Sneakers				
Sub-total				

Matrix [C']	<i>Fred's Footwear – Combined plus 20%</i>			
	June	July	August	Sub-total
Dress Shoes				
Casual Shoes				
Sneakers				
Sub-total				