

Matrix Applications Project

Group None
Assigned Names of Participants Misty Larsen

Instructions: One group member should fill in sheet using dark pencil or ink, showing steps in the provided work space and answers in answer spaces. Group members must work together to assure correct solutions. The final work shown should be split among group members with each group member providing the work and solution for part of the project. Participants' initials should appear to the right of their work/solutions.

Matrices can be used to organize large amounts of information in a format which is easy to understand and manipulate. In this lab you will take information about a large building project and manipulate it in matrix form to come up with a bid for the project.

Project: A contractor needs to give a developer a bid for a 100 house subdivision. The following tables contain information about the project.

Types of houses required: Matrix A

Model	3 bedroom style	4 bedroom style
Ranch	12	15
Tudor	8	36
Colonial	18	11

Materials required: Matrix B

Style	Concrete (cubic yards)	Lumber (1000 board feet)	Brick (1000's)	Shingles (100 sq. ft. bundles)
3 bedroom	50	4.5	24	12
4 bedroom	60	6	36	16

Labor costs (per unit of material):

Matrix C

Concrete laying	\$28
Framing	\$4500
Brick laying	\$360
Roofing	\$450

Materials costs (per unit of material):

Matrix D

Concrete	\$135
Lumber	\$2100
Brick	\$650
Shingles	\$82

Use the above information to construct the required matrices. Label the matrices with different capital letters and write them below. The purpose of this lab is to work with matrices. Solutions arrived at without showing matrix operations will not be considered correct.

$$\begin{bmatrix} 12 & 15 \\ 8 & 36 \\ 18 & 11 \end{bmatrix}$$

A

$$\begin{bmatrix} 50 & 4.5 & 24 & 12 \\ 60 & 6 & 36 & 16 \end{bmatrix}$$

B

$$\begin{bmatrix} \$28 \\ \$4500 \\ \$360 \\ \$450 \end{bmatrix}$$

C

$$\begin{bmatrix} \$135 \\ \$2100 \\ \$650 \\ \$82 \end{bmatrix}$$

D

