$5x\text{-}2y \leq 75$

$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$

$S = Pe^{rt}$

$APY = \left(1+\frac{r}{n}\right)^{n}\text{-}1$

Math 1090 ~ Business Algebra

Section 2.1 Basic Operations with Matrices

Objectives:
- Identify elements of a matrix.
- Differentiate between a scalar and a matrix.
- Identify a square matrix.
- Identify the size of a matrix.
- Determine the transpose of a matrix.
- Write a zero matrix.
- Identify Row or Column Vectors.
- Perform matrix addition and multiplication of a matrix by a scalar.

Vocabulary	Definitions
matrix	$A = B$
entry	A^{T}
scalar	0 matrix
order (size)	
Square matrix	
Column or row vector	

Ex 1: For A = $\begin{bmatrix} 3 & 2 & 1 \\ 4 & 0 & -2 \\ 6 & 1 & 5 \end{bmatrix}$

  a) size =   b) $a_{13}=$

  c) $A^T =$ d) first column vector =

Ex 2: Given A = $\begin{bmatrix} 1 & 3 & 5 & 7 \\ -5 & 1 & 0 & 1 \\ 3 & -2 & 7 & 0 \end{bmatrix}$

  a) What size (order) is A?

  b) What is a_{24}? a_{31}?

  c) Write a zero matrix the same size as A.

  d) Find A^T A = $\begin{bmatrix} 1 & 3 & 5 & 7 \\ -5 & 1 & 0 & 1 \\ 3 & -2 & 7 & 0 \end{bmatrix}$

  e) Find -A

Ex 3: Given $A = \begin{bmatrix} 1 & 3 & 1 & 0 \\ 4 & 2 & 1 & 5 \\ -1 & 0 & -2 & 0 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 2 & 5 & 1 \\ 0 & 0 & -4 & -3 \\ 1 & 4 & -1 & 2 \end{bmatrix}$ $C = \begin{bmatrix} 1 & 1 & 1 \\ 2 & 2 & 2 \\ -1 & 0 & 3 \\ 4 & 5 & 0 \end{bmatrix}$

    a) Find $2A + B$

Matrix Addition

$A + B =$

    b) $A - 3C^T =$

Scalar Multiplication

$cA =$

Ex 4: Given $A = \begin{bmatrix} 4 \\ 1 \\ 3 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 9 & 1 \end{bmatrix}$ $C = \begin{bmatrix} -3 & 1 & 5 \end{bmatrix}$ $D = \begin{bmatrix} -2 \\ 3 \\ 0 \end{bmatrix}$

    a) $B^T + D =$

    b) $B - (A-D)^T =$

    c) $(2C + A^T)^T =$