Assignment WW-MatrixAlgebra

1. (1 point)
If

$$A = \begin{bmatrix} 6 & -4 \\ -5 & 8 \end{bmatrix} \quad \text{and} \quad B = \begin{bmatrix} 0 & 6 \\ 3 & -2 \end{bmatrix}$$

then

$$A(2B) = \begin{bmatrix} \_\_ & \_\_ \\ \_\_ & \_\_ \end{bmatrix}$$

Correct Answers:

- -24
- 88
- 48
- -92

2. (1 point) Perform the following operation:

$$\begin{bmatrix} a & 1-a \\ 1+a & -a \end{bmatrix} \begin{bmatrix} 6 & 4 & -5 \\ 4 & 1 & -4 \end{bmatrix}$$

$$= \begin{bmatrix} \_\_\_\_ & \_\_\_\_ & \_\_\_\_ \\ \_\_\_\_ & \_\_\_\_ & \_\_\_\_ \end{bmatrix}$$

Note: The entries in the resulting matrix are functions of a.
Correct Answers:

- (6-4)*a+4
- (4-1)*a+1
- (-5--4)*a+-4
- (6-4)*a+6
- (4-1)*a+4
- (-5--4)*a+-5

3. (1 point) Determine the value(s) of x such that

$$\begin{bmatrix} x & 2 & 1 \end{bmatrix} \begin{bmatrix} 3 & -6 & -3 \\ -6 & 2 & 1 \\ -3 & -16 & 1 \end{bmatrix} \begin{bmatrix} x \\ -1 \\ 2 \end{bmatrix} = 0$$

$x =$ _____
Note: If there is more than one value write them separated by commas.

Correct Answers:

- 2, 3

4. (1 point) Given the matrix $A = \begin{bmatrix} 1 & 1 \\ 0 & -3 \end{bmatrix}$, find A^3.

$A^3 = \begin{bmatrix} \_\_ & \_\_ \\ \_\_ & \_\_ \end{bmatrix}$
Correct Answers:

- $\begin{bmatrix} 1 & 7 \\ 0 & -27 \end{bmatrix}$