

Exercise Answers

1. Page 2

(a)
$$\begin{bmatrix} 5 \\ 1 \\ -9 \end{bmatrix}$$

(b)
$$\begin{bmatrix} 3/2 \\ -1/2 \end{bmatrix}$$

(c) Calculation with the augmented matrix will reveal a contradiction, implying there is no solution to $T(\mathbf{x}) = \mathbf{d}$, implying \mathbf{d} is never an output of T .

2. Page 5

(a) Yes.

(b) No.

(c) No.

3. Page 6

(a)
$$\begin{bmatrix} 3 \\ 9 \end{bmatrix}$$

(b) No.

(c) The line $b_2 = 3b_1$.

4. Page 7

(a)
$$\begin{bmatrix} 6 \\ 3 \end{bmatrix}$$

(b)
$$\begin{bmatrix} 9 \\ -13 \end{bmatrix}$$

(c)
$$\begin{bmatrix} 5 \\ 6 \end{bmatrix}$$