

## MATH 54 SUMMER 2017, QUIZ 6

Suppose  $A$  is a  $5 \times 5$  matrix such that the solution set of  $A\mathbf{x} = \mathbf{0}$  is  $\text{span}\{\mathbf{a}, \mathbf{b}, \mathbf{c}\}$  and  $A\mathbf{d} = \mathbf{f}$ . Find all solutions to  $A\mathbf{x} = \mathbf{f}$ .

$$\mathbf{a} = \begin{bmatrix} 1 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix} \quad \mathbf{b} = \begin{bmatrix} 1 \\ 1 \\ 0 \\ 0 \\ 0 \end{bmatrix} \quad \mathbf{c} = \begin{bmatrix} 1 \\ 1 \\ 1 \\ 0 \\ 0 \end{bmatrix} \quad \mathbf{d} = \begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{bmatrix} \quad \mathbf{f} = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 1 \end{bmatrix}$$