FIGURE 5   Parallel solution sets of $A\mathbf{x} = \mathbf{b}$ and $A\mathbf{x} = \mathbf{0}$.

$$\mathbf{x} = \mathbf{p} + t\mathbf{v}$$

The (parametric) equation of the line through $\mathbf{p}$ parallel to $\mathbf{v}$.