

Use matrices to find solutions for the following:

$$\mathbf{a} \quad \begin{cases} y = 2x + 3 \\ 3x - y = 1 \end{cases}$$

$$\mathbf{b} \quad \begin{cases} x = 2y + 1 \\ 4x - 3y = -6 \end{cases}$$

$$\mathbf{c} \quad \begin{cases} 3x + 5y = 3 \\ y = 2x - 7 \end{cases}$$

$$\mathbf{d} \quad \begin{cases} x = y - 1.5 \\ 5.8x - 4y = -6 \end{cases}$$

$$\mathbf{e} \quad \begin{cases} y = 4.5x - 4.75 \\ x = y + 1.3 \end{cases}$$

$$\mathbf{f} \quad \begin{cases} y = 5x \\ x = 12 - 3y \end{cases}$$

- 1 Two numbers have a sum of 58 and a difference of 22. Find the numbers.
- 2 The larger of two numbers is one more than double the smaller, and their sum is 82. Find the two numbers.
- 3 A hairdresser has 13 small and 14 large cans of hairspray, giving a total of 9 L of hairspray. At this time last year she had 4 small and 12 large cans, totalling 6 L of hairspray. How much spray is in each size can?
- 4 A violinist is learning a waltz and a sonatina. One day she practices for 33 minutes by playing the waltz 4 times and the sonatina 3 times. The next day she plays the waltz 6 times and the sonatina only once, for a total of 25 minutes. Determine the length of each piece.

