

## More linear simultaneous equations

**1** Solve simultaneously:

**a**  $x = 8 - 2y$   
 $2x + 3y = 13$

**b**  $y = 4 + x$   
 $5x - 3y = 0$

**c**  $x = -10 - 2y$   
 $3y - 2x = -22$

**d**  $x = -1 + 2y$   
 $x = 9 - 2y$

**e**  $3x - 2y = 8$   
 $x = 3y + 12$

**f**  $x + 2y = 8$   
 $y = 7 - 2x$

**2** Solve simultaneously:

**a**  $x = -1 - 2y$   
 $2x - 3y = 12$

**b**  $y = 3 - 2x$   
 $y = 3x + 1$

**c**  $x = 3y - 9$   
 $5x + 2y = 23$

**d**  $y = 5x$   
 $7x - 2y = 3$

**e**  $x = -2 - 3y$   
 $3x - 2y = -17$

**f**  $3x - 5y = 26$   
 $y = 4x - 12$

**3 a** Try to solve by substitution:  $y = 3x + 1$  and  $y = 3x + 4$ .

**b** What is the simultaneous solution for the equations in **a**?

**4 a** Try to solve by substitution:  $y = 3x + 1$  and  $2y = 6x + 2$ .

**b** How many simultaneous solutions do the equations in **a** have?

## Answers

**1 a**  $x = 2, y = 3$       **b**  $x = 6, y = 10$       **c**  $x = 2, y = -6$

**d**  $x = 4, y = 2\frac{1}{2}$       **e**  $x = 0, y = -4$       **f**  $x = 2, y = 3$

**2 a**  $x = 3, y = -2$       **b**  $x = \frac{2}{5}, y = \frac{11}{5}$       **c**  $x = 3, y = 4$

**d**  $x = -1, y = -5$       **e**  $x = -5, y = 1$       **f**  $x = 2, y = -4$

**3 a** obtain  $1 = 4$       **b** no solution

**4 a** obtain  $2 = 2$       **b** an infinite number of solutions