

**1** Solve each of the following equations for  $x$ :

**a**  $2 - 3x = 4$

**b**  $\frac{2x-3}{6} = 5$

**c**  $2(3 - 2x) = 5x - 4$

**d**  $\frac{5x-2}{6} + \frac{2-4x}{5} = 1$

**2** Solve the simultaneous equations:

$$2x + 0.4y = 8$$

$$5x - 1.2y = 9$$

**3** Solve the inequality  $5x - 4 > 21 - 5x$ .

**4** A man was 32 years old when his daughter was born. He is now five times as old as his daughter. How old is his daughter now?

**5** I think of a pair of numbers. If I add 11 to the first, I obtain a number that is twice the second. If I add 20 to the second, I obtain a number which is twice the first. What are the numbers?

**6** Make  $P$  the subject of the formula  $I = \frac{PRT}{100}$ .

**7** Make  $x$  the subject of the formula  $y = \frac{2-x}{3+2x}$ .

**8** If  $v = u + at$ ,  $v = 12$ ,  $u = 2$  and  $a = 4$ , find the value of  $t$ .

**9** The perimeter of a square is not more than 80 cm. What is the largest possible area of the square?

**10** Solve the inequality  $1 + \frac{1-2x}{3} > 10$ .

**11** Solve each of the following literal equations for  $x$ :

**a**  $a(x + b) = \frac{x+a}{a}$

**b**  $\frac{m}{x} + \frac{n}{x} = 1$

**c**  $m(x + n) = n(x + m) + m$

**12** The sum of two numbers is 100 and their difference is 200. What are the two numbers?

**13** Make  $m$  the subject of the formula  $\frac{2}{m} - \frac{3}{n} = \frac{1}{p}$ .