

Use your CAS calculator to find the solutions to these problems. The exact method will vary depending on the calculator used.

**1 a**  $x = a - b$

**b**  $x = 7$

**c**  $x = -\frac{a \pm \sqrt{a^2 + 4ab - 4b^2}}{2}$

**d**  $x = \frac{a + c}{2}$

**2 a**  $(x - 1)(x + 1)(y - 1)(y + 1)$

**b**  $(x - 1)(x + 1)(x + 2)$

**c**  $(a^2 - 12b)(a^2 + 4b)$

**d**  $(a - c)(a - 2b + c)$

**3 a**  $axy + b = (a + c)y$

$bxy + a = (b + c)y$

Dividing by  $y$  yields:

$$ax + \frac{b}{y} = a + c$$

$$bx + \frac{a}{y} = b + c$$

let  $n = \frac{1}{y}$  and the equations become:

$$ax + bn = a + c$$

$$bx + an = b + c$$

$$\therefore x = \frac{a + b + c}{a + b}$$

$$y = \frac{a + b}{c}$$

**b**  $x(b - c) + by - c = 0$

$$y(c - a) - ax + c = 0$$

$$(b - c)x + by = c$$

$$-ax + (c - a)y = -c$$

$$\therefore x = \frac{-(a - b - c)}{a + b - c}$$

$$y = \frac{a - b + c}{a + b - c}$$