Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

x: $2 - 1 = 1$; y: $-3 - 4 = -7$, so $(\mathbf{1}, \mathbf{-7})$

2.2

$x = 2$ and $y = 1$; $(-4, 0)$; $(0, -2)$

2.3

translation 1 to the left; vertical stretch, scale factor 3; reflection in the x-axis

3.1

(a) $x = 2$; $y = 1$

(b) $\dfrac{3}{x-2} = -1$, $(-1, 0)$; $\left(0, -\frac{1}{2}\right)$

(c) vertical stretch, scale factor 3; translation 2 to the right; translation 1 up

3.2

(a) $(0, 1)$

(b) $(1.5, 1)$

(c) $A'(-3, 0)$; $B'(-1, -4)$; $C'(2, -1)$

(d) $-4 \leq y \leq 0$

(e) range of f is $0 \leq f(x) \leq 4$; $1 \leq y \leq 9$