

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

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

2.1

- $5(3) + 2$
 $= 17$

2.2

- $y = 5x + 2$, so $x = \frac{y - 2}{5}$
 $f^{-1}(x) = \frac{x - 2}{5}$

2.3

- do g first, then f : $f(x + 3) = 2(x + 3)$
 $= 2x + 6$

3.1

(a)

- $f(2) = 3(2) - 4 = 2$
- then $g(2) = 2^2$
 $= 4$

(b)

- do g first: $f(x^2) = 3x^2 - 4$
 $= 3x^2 - 4$
- note $gf(x) = (3x - 4)^2$, which is not the same

(c)

- $y = 3x - 4$, so $x = \frac{y + 4}{3}$
 $f^{-1}(x) = \frac{x + 4}{3}$

3.2

- the denominator $x - 1$ must not be zero
 $x = 1$