

CHAPTER 1: INVERSE AND COMPOSITE FUNCTIONS

- 20 $f: x \rightarrow 2x - 1$ and $g: x \rightarrow x^2 - 1$.
Find, in their simplest forms,

(a) $f^{-1}(x)$,

Answer (a) $f^{-1}(x) = \dots\dots\dots$ [2]

(b) $gf(x)$.

Answer (b) $gf(x) = \dots\dots\dots$ [2]

- 8 $f(x) = x^2 - 4x + 3$ and $g(x) = 2x - 1$.

(a) Solve $f(x) = 0$. [2]

(b) Find $g^{-1}(x)$. [2]

(c) Solve $f(x) = g(x)$, giving your answers correct to 2 decimal places. [5]

(d) Find the value of $gf(-2)$. [2]

(e) Find $fg(x)$. Simplify your answer. [3]

- 8 $f(x) = 2x - 1$, $g(x) = \frac{3}{x} + 1$, $h(x) = 2^x$.

(a) Find the value of $fg(6)$. [1]

(b) Write, as a **single fraction**, $gf(x)$ in terms of x . [3]

(d) Write down the range of values of x for which the graph of $y = f(x)$ has a negative gradient. [2]

18 $f(x) = x^3 - 3x^2 + 6x - 4$ and $g(x) = 2x - 1$.

Find

(a) $f(-1)$,

Answer(a) [1]

(b) $gf(x)$,

Answer(b) [2]

(c) $g^{-1}(x)$.

Answer(c) [2]
