

9 Functions f and g are defined for $x > 3$ by

$$\begin{aligned} f &: x \mapsto \frac{1}{x^2 - 9}, \\ g &: x \mapsto 2x - 3. \end{aligned}$$

(i) Find and simplify an expression for $gg(x)$. [2]

This image shows a single sheet of white paper with ten horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.

(ii) Find an expression for $f^{-1}(x)$ and state the domain of f^{-1} . [4]

[illegible]

[illegible]

(iii) Solve the equation $\lg(x) = \frac{1}{7}$.

[4]

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