

Question 1**(5 marks)**

Functions f, g are defined such that:

$$f(x) = \sqrt{x - 3}$$

$$g(x) = \frac{x}{x - 2}$$

(a) Determine $g \circ f(x)$. (1 mark)

(b) Determine the domain for $g \circ f(x)$. (2 marks)

(c) Given that $f^{-1}(x) = x^2 + 3$, is it true that $f^{-1}(-1) = 4$? (2 marks)

Explain.