

7 The functions f and g are defined by

$$f(x) = \sqrt{10 - 2x} \quad \text{for } x \leq 5$$

$$g(x) = \frac{1}{x} \quad \text{for } x \neq 0$$

The function h has maximum possible domain and is defined by

$$h(x) = gf(x)$$

7 (a) Find an expression for $h(x)$

[1 mark]

7 (b) Find the domain of h

[1 mark]

7 (c) Show that $h^{-1}(x) = 5 - \frac{1}{2x^2}$

[3 marks]