

Higher Maths
SQA 2015 Paper 2
Question 2



Functions f and g are defined on suitable domains by

$$f(x) = 10 + x \quad \text{and} \quad g(x) = (1 + x)(3 - x) + 2.$$

(a) Find an expression for $f(g(x))$. 2

(b) Express $f(g(x))$ in the form $p(x + q)^2 + r$. 3

(c) Another function h is given by $h(x) = \frac{1}{f(g(x))}$.

What values of x cannot be in the domain of h ? 2

Answers:

(a) $10 + (1 + x)(3 - x) + 2$

(b) $-1(x - 1)^2 + 16$

(c) $x = -3, x = 5$