

f r q

x	1	2	3	4	5
$f(x)$	1	3	5	3	1

The domain of f consists of the five real numbers 1, 2, 3, 4, and 5. The table defines the function f for these values. The function g is given by $g(x) = 2 \ln x$.

Part A

2.

(i) The function h is defined by $h(x) = (g \circ f)(x) = g(f(x))$. Find the value of $h(4)$ as a decimal approximation, or indicate that it is not defined.



(ii) Find all values of x for which $f(x) = 3$, or indicate that there are no such values.

Part C

(i) Determine if f has an inverse function.

(ii) Give a reason for your answer based on the definition of a function and the table of values of $f(x)$.

Part A

Select a point value to view scoring criteria, solutions, and/or examples to score the response.



0	1	2
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The student response includes both of these criteria.

- Value of $h(4)$
- Values for which $f(x) = 3$

Model Solution

(i) $h(4) = g(f(4)) = g(3) = 2 \ln 3 = 2.197$

(ii) From the table, $f(x) = 3$ when $x = 2$ and $x = 4$.

Part B

Select a point value to view scoring criteria, solutions, and/or examples to score the response.