HIGHER

2.2 Functions: Composite and Inverse Functions: 10-minute Pack

Total Marks

EDEXCEL 4MA1 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The function g is defined by $g(x) = x^2 - 4$. For the function g in this question, find g(3).

(Total for Question 1 is 1 mark)

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2 Let $f(x) = 3x - 1$ and $h(x) = 5$. For these functions, work out f(h(2)).

(Total for Question 2 is 2 marks)

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3 $p(x) = -x - 2$

$q(x) = -2x - 7$

Find qp(x). Give your answer in its simplest form.

(Total for Question 3 is 3 marks)

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4 $f(x) = -2x + 2$

Find $f^{-1}(1)$.

(Total for Question 4 is 2 marks)

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Mark scheme · 2.2 Functions: Composite and Inverse Functions: 10-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

g(3) = 5 cao	**B1**

Answer: 5

Question 2

evaluates h(2) = 5 and substitutes into f, or shows f(5) seen	**M1**
f(h(2)) = 14 cao	**A1**

Answer: 14

Question 3

substitutes the inner function into the outer: q(p(x)) = q(-x - 2)	**M1**
expands brackets and collects like terms	**M1**
qp(x) = 2x - 3 cao	**A1**

Answer: qp(x) = 2x - 3

Question 4

solves -2x + 2 = 1, or finds $f^{-1}(x) = (x - (2))/-2$	**M1**
$f^{-1}(1) = 1/2$	**A1**

Answer: $f^{-1}(1) = 1/2$

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