MME

GCSE MATHEMATICS

AQA | Edexcel | OCR | WJEC

Functions – The Basics

Please write clearly in block capitals

Forename:
Surname:

Materials

For this paper you must have:
- mathematical instruments

You ***can*** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 Work out the value of each function.

1(a) If $f(x) = x - 10$, find $f(20)$

[1 mark]

Answer _____

1(b) If $g(x) = -\frac{x}{4}$, find $g(-40)$

[1 mark]

Answer _____

1(c) If $f(x) = \frac{-x^2+10}{5}$, find $f(5)$

[1 mark]

Answer _____

1(d) If $h(x) = -5(x-2)^2$, find $h(12)$

[1 mark]

Answer _____

1(e) If $g(x) = \frac{x-3}{4}$, find $g(83)$

[1 mark]

Answer _____

Turn over for next question

5

2 A function is given by $f(x) = 3x + 3$

Complete the table below:

[2 marks]

Input	Answer
$f(2)$	9
$f(3)$	
$f(-3)$	
	3
$f(a)$	

3 Considering the function $f(x) = 2x^2 - 1$

Complete the table below:

[2 marks]

Input	Output
$f(-1)$	
$f(4)$	
$f(2)$	
$f(-b)$	
$f(1)$	

4 Given that $f(x) = (x-5)^2$, find:

4(a) $f(3)$

[1 mark]

Answer _____

4(b) $f(0)$

[1 mark]

Answer _____

4(c) Solve $f(x) = 0$

[2 marks]

$x =$ _____

4

5 Work out the value of each function.

5(a) $f(x) = x - 10$

Solve $f(x) = 0$

[1 mark]

$x =$ _____

5(b) $g(x) = -\frac{x}{4}$

Solve $g(x) = 0.25$

[1 mark]

$x =$ _____

5(c) $f(x) = \frac{x^2 + 11}{5}$

Solve $f(x) = 12$

[2 marks]

$x =$ _____

5(d) $h(x) = -5(x - 2)^2$

Solve $h(x) = -5$

[2 marks]

$x =$ _____

End of Questions

6

END