Additional Assessment Materials
Summer 2021

Pearson Edexcel

GCSE (9-1) in Mathematics 1MA1 Foundation (Calculator) (Public release version)

Topic 2: Algebra (Test 1)

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Additional Assessment Materials, Summer 2021

General guidance to Additional Assessment Materials for use in 2021

Context

- Additional Assessment Materials are being produced for GCSE, AS and A levels (with the exception of Art and Design).
- The Additional Assessment Materials presented in this booklet are an optional part of the range of evidence teachers may use when deciding on a candidate's grade.
- 2021 Additional Assessment Materials have been drawn from previous examination materials, namely past papers.
- Additional Assessment Materials have come from past papers both published (those materials available publicly) and unpublished (those currently under padlock to our centres) presented in a different format to allow teachers to adapt them for use with candidate.

Purpose

- The purpose of this resource to provide qualification-specific sets/groups of questions covering the knowledge, skills and understanding relevant to this Pearson qualification.
- This document should be used in conjunction with the mapping guidance which will map content and/or skills covered within each set of questions.
- These materials are only intended to support the summer 2021 series.

Subject Specific Guidance

This booklet contains questions on the topic given on the front cover. .

The questions in the should take approximately 45-60 minutes to complete.

This topic test is part of a suite of 10 topic tests. As there is some overlap between the topics of number and ratio; these were grouped together and both a non-calculator and calculator assessment produced at each tier level. The topics of probability and statistics go hand-in-hand so these were also grouped together.

Topic	**Tier**	**Calculator/Non-Calculator**
Number & Ratio	Foundation	Calculator
Number & Ratio	Foundation	Non-Calculator
Number & Ratio	Higher	Calculator
Number & Ratio	Higher	Non-Calculator
Algebra	Foundation	Calculator
Algebra	Higher	Calculator
Probability & Statistics	Foundation	Calculator
Probability & Statistics	Higher	Calculator
Geometry	Foundation	Calculator
Geometry	Higher	Calculator

1 (*a*) Simplify $3m - m - m + 3m$

.....

(1)

(*b*) Simplify $2 \times n \times p \times 4$

.....

(1)

(Total for Question 1 is 2 marks)

---

2 Here are the first 4 terms of a sequence.

2 9 16 23

(*a*) (i) Write down the next term in the sequence.

.....

(1)

(ii) Explain how you got your answer.

.....

(1)

(*b*) Work out the 10th term of the sequence.

.....

(1)

(Total for Question 2 is 3 marks)

---

3 (*a*) Solve $x + x + x = 51$

$x =$ .....

(1)

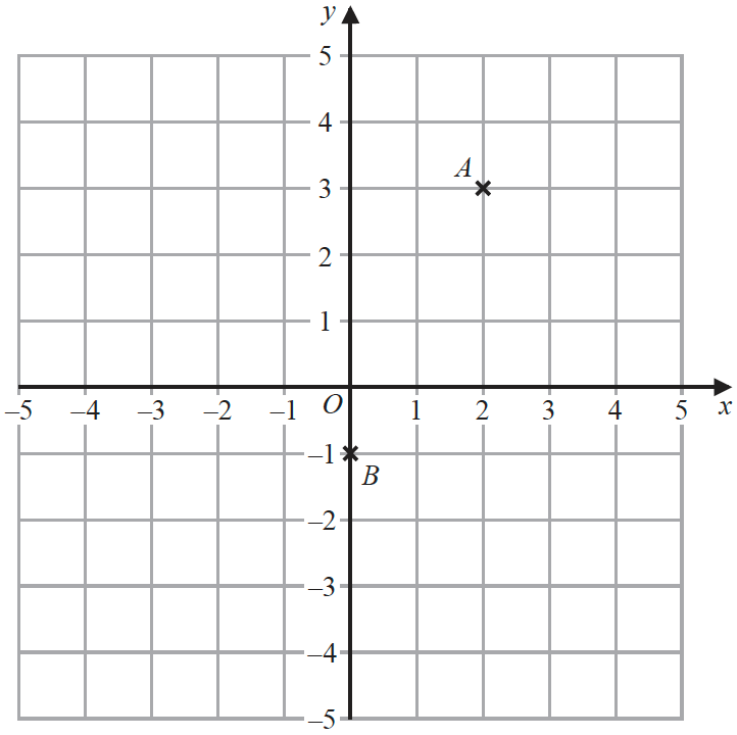
(*b*) Solve $\frac{y}{4} = 3$

$y =$ .....

(1)

(Total for Question 3 is 2 marks)

4



(*a*) Write down the coordinates of the point *A*.

(..... , ...)

(1)

(*b*) Write down the coordinates of the point *B*.

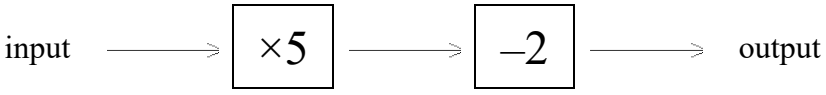
(..... , ...)

(1)

(Total for Question 4 is 2 marks)

---

5 Here is a number machine.



(*a*) Work out the **output** when the input is 8

.....

(1)

(*b*) Work out the **input** when the output is 28

.....

(2)

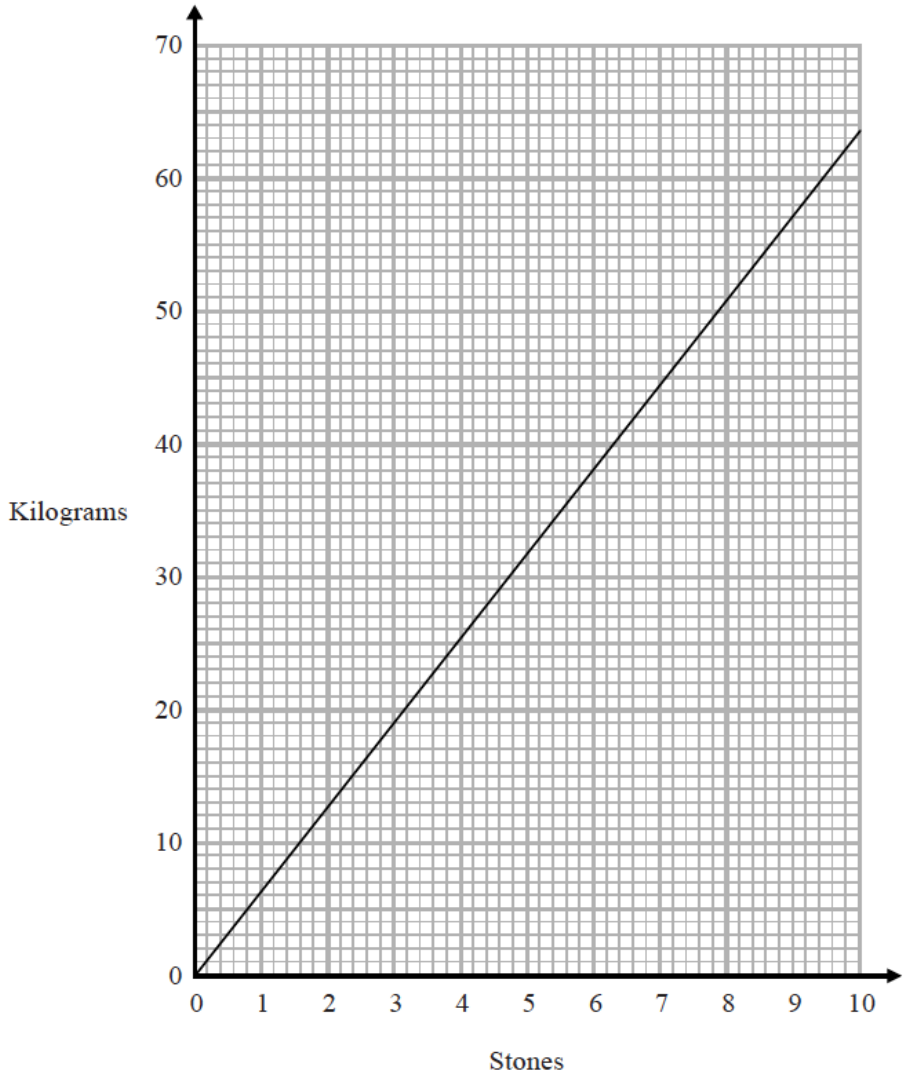
(Total for Question 5 is 3 marks)

6 Simplify $10 + 3c + 5d - 7c + d$

.....

(Total for Question 6 is 2 marks)

7 You can use this graph to change between stones and kilograms.



(*a*) Change 3 stones to kilograms.

..... kilograms

(1)

(*b*) Change 80 kilograms to stones.

..... stones

(2)

(Total for Question 7 is 3 marks)

8 (*a*) $P = 7r + 3q$

Work out the value of P when $r = 5$ and $q = -4$

.....

(2)

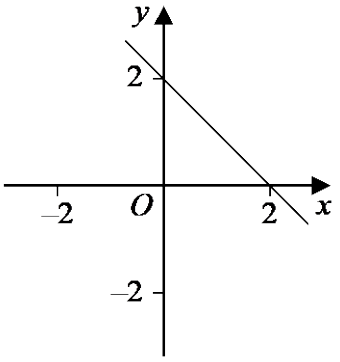
(*b*) Solve $14n > 11n + 6$

.....

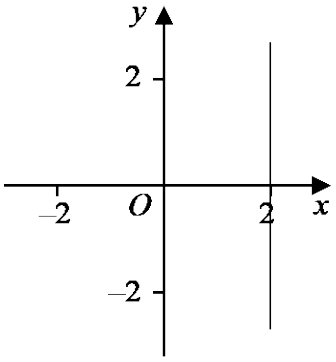
(2)

(Total for Question 8 is 4 marks)

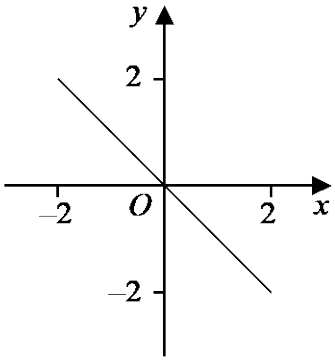
9 Here are six straight line graphs.



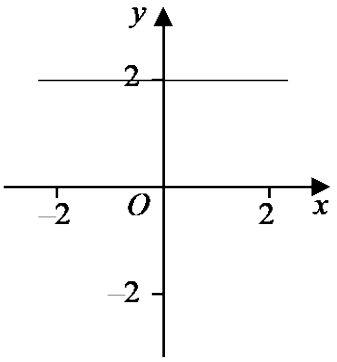
Graph A



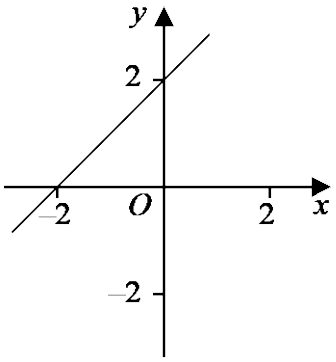
Graph B



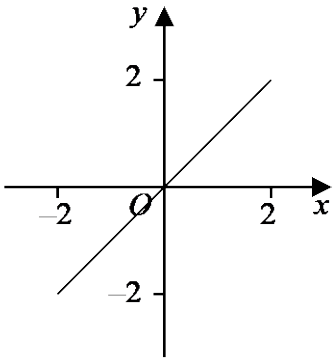
Graph C



Graph D



Graph E



Graph F

Match each equation in the table to the correct graph.
Write the letter of the graph in the table.

Equation	Graph
$y = 2$	
$y = x$	
$x + y = 2$	

(Total for Question 9 is 2 marks)

10 Ben is n years old.
Chloe is twice as old as Ben.
Dan is five years younger than Ben.

The total of Ben's age, Chloe's age and Dan's age is T years.

Find a formula for T in terms of n.

.....

(Total for Question 10 is 3 marks)

---

11 (*a*) Expand $x(x - 4)$

.....

(1)

(*b*) Factorise $15y - 10$

.....

(1)

(*c*) Solve $7(f - 5) = 28$

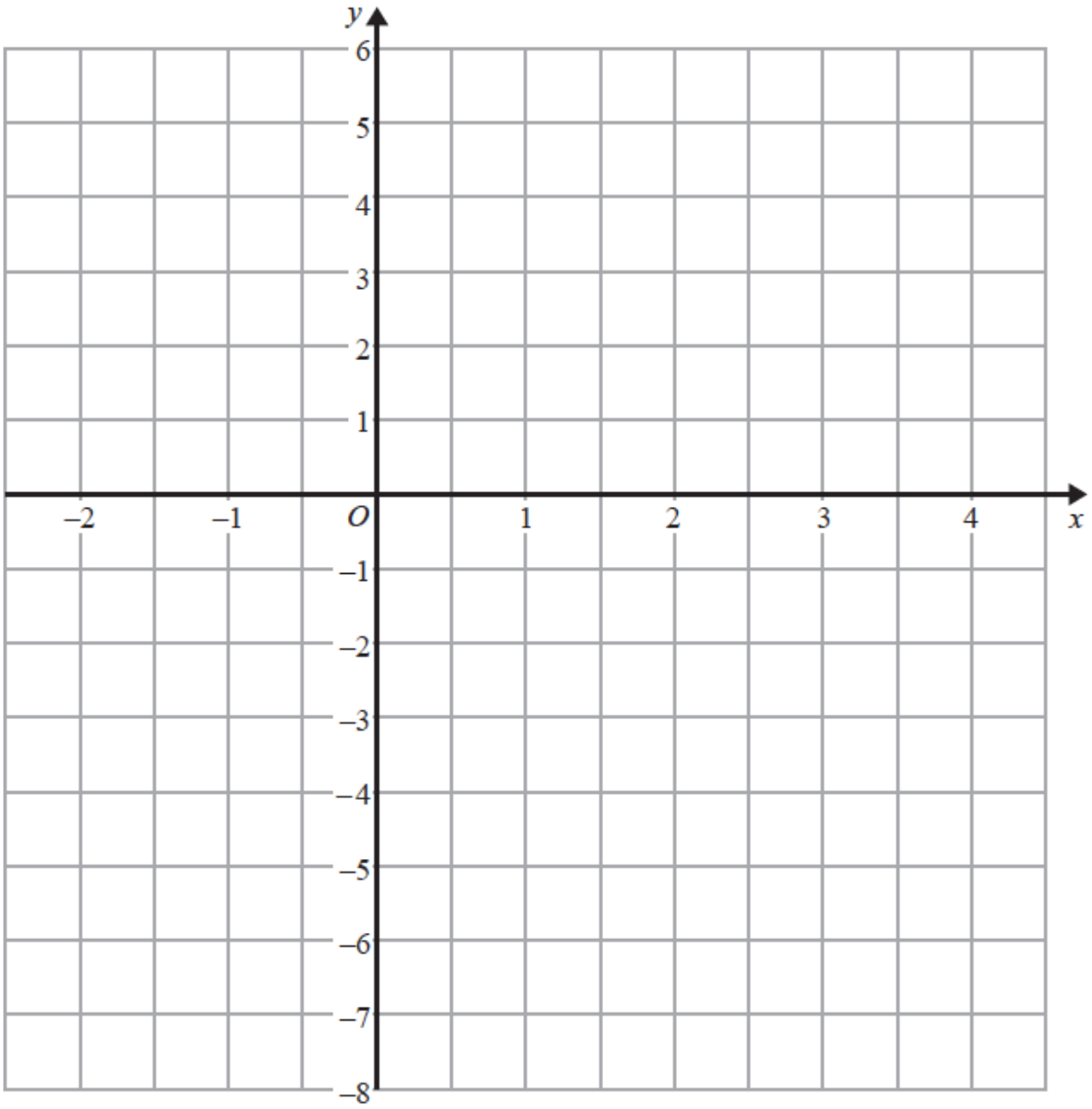
$f =$ .....

(2)

(Total for Question 11 is 4 marks)

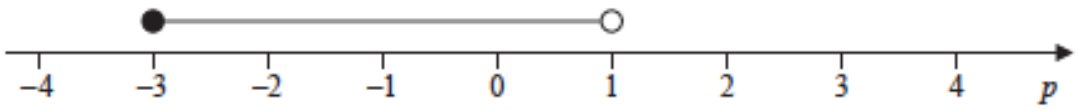
---

12 On the grid below, draw the graph of $y = 2x - 3$ for values of x from -2 to 4



(Total for Question 12 is 3 marks)

13 (*a*) Here is a number line.



Write down the inequality shown on the number line.

.....

(2)

$3 < y \leqslant 7$ where y is an integer.

(*b*) Write down all the possible values of y.

.....

(2)

(Total for Question 13 is 4 marks)

---

14 Here are the first six terms of an arithmetic sequence.

3 8 13 18 23 28

Find an expression, in terms of n, for the nth term of this sequence.

.....

(Total for Question 14 is 2 marks)

---

15 (*a*) Simplify $(p^2)^5$

.....

(1)

(*b*) Simplify $12x^7y^3 \div 6x^3y$

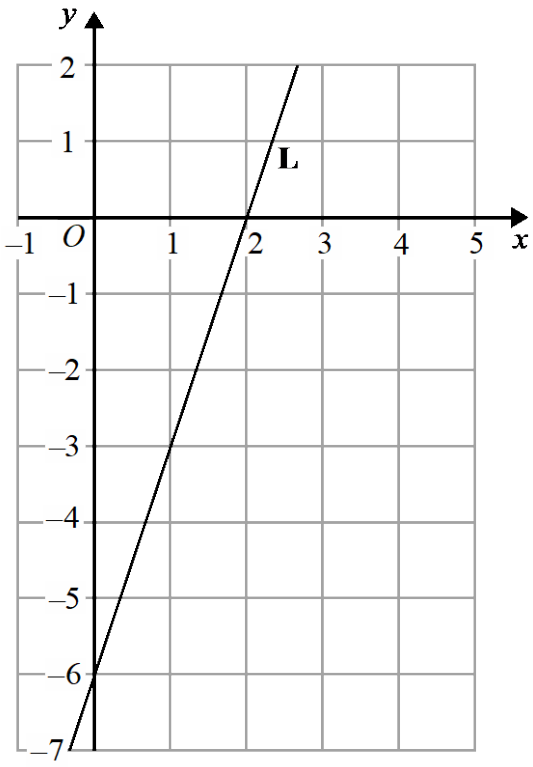
.....

(2)

(Total for Question 15 is 3 marks)

---

16 The line **L** is shown on the grid.



Find an equation for **L**.

.....

(Total for Question 16 is 3 marks)

17 Make x the subject of the formula $y = 2x + 4$

.....

(Total for Question 17 is 2 marks)

18 Solve the simultaneous equations

$$x + 3y = 12$$
$$5x - y = 4$$

$x =$ .....

$y =$ .....

(Total for Question 18 is 3 marks)

TOTAL FOR PAPER IS 50 MARKS