Additional Assessment Materials
Summer 2021

Pearson Edexcel

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

Topic 1: Number and Ratio (Test 1)

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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- Additional Assessment Materials have come from past papers both published (those materials available publicly) and unpublished (those currently under padlock to our centres) presented in a different format to allow teachers to adapt them for use with candidate.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.

1 Write a number in each box to make the calculation correct.

(i) 56.3 + 43.7 = 100

(1)

(ii) $\frac{2}{7}$ + $\frac{5}{7}$ = 1

(1)

(Total for Question 1 is 2 marks)

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2 Write $\frac{4}{50}$ as a percentage.

$\frac{8}{100} = 0.08 = 8\%$

8 %

(Total for Question 2 is 1 mark)

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3 Work out the value of 3^5

$3 \times 3 \times 3 \times 3 \times 3 = 243$

243

(Total for Question 3 is 1 mark)

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4 (*a*) Change 35 cm to mm.

cm → mm = x10

350 mm

(1)

(*b*) Change 7700 millilitres to litres.

ml → l = ÷ 1000

7.7 litres

(1)

(*c*) Change 0.32 kilograms to grams.

kg → g = x 1000

320 grams

(1)

(Total for Question 4 is 3 marks)

5 Here are four fractions.

$$\frac{2}{5} \qquad \frac{11}{30} \qquad \frac{1}{2} \qquad \frac{7}{15}$$

Write these fractions in order of size.
Start with the smallest fraction.

$\frac{2}{5} = \frac{12}{30}$, $\frac{11}{30}$, $\frac{15}{30}$, $\frac{14}{30}$

$\frac{11}{30}$, $\frac{2}{5}$, $\frac{7}{15}$, $\frac{1}{2}$

(Total for Question 5 is 2 marks)

6 Mohsin, Yusuf and Luke are going to play a game.
At the end of the game, one of them will be in First place, one of them will be in Second place and one of them will be in Third place.

Use the table below to list all the possible outcomes of the game.

First place	Second place	Third place
Mohsin	Yusuf	Luke
Mohsin	Luke	Yusuf
Yusuf	Mohsin	Luke
Yusuf	Luke	Mohsin
Luke	Mohsin	Yusuf
Luke	Yusuf	Mohsin

(Total for Question 6 is 2 marks)

7 $\frac{4}{5}$ of a number is 32

Find the number.

$\frac{4}{5} \times x = 32$

$\Rightarrow x = 32 \div \frac{4}{5}$

$x = 32 \times \frac{5}{4}$

$x = 40$ ⟶ 40

(Total for Question 7 is 2 marks)

8 Suha is going to buy 150 envelopes.

Here is some information about the cost of envelopes in two shops.

Letters2send	**Stationery World**
Pack of 25 envelopes for £3.49	Pack of 10 envelopes for £2.10 Buy 2 packs get 1 pack free

Suha wants to buy the envelopes as cheaply as possible.

Which shop should Suha buy the 150 envelopes from?
You must show how you get your answer.

L25

150 ÷ 25 = 6

£3.49 x 6 = £20.94

SW

20 envelopes + 1 free = £2.10 x 2 = £4.20

= 30 envelopes for 4.20

150 ÷ 30 = 5

£4.20 x 5 = £21.00 for 150 envelopes

Suha should by the envelopes from Letters2send.

(Total for Question 8 is 4 marks)

9 The table shows a cricket club's income in 2016 from a fete, a quiz and membership fees.

	Income		
Fete			£250
Quiz	Entry fees	13 at	£5 each
	Refreshments		£35
Membership fees		25 at	£20 each

13 x 5 = £65

+ £35

Quiz ⇒ £100

25 x £20 = £500

Express as a ratio

the income from the fete to the income from the quiz to the income from membership fees.

Give your ratio in its simplest form.

fete : quiz : membership fees

⇒ 250 : 100 : 500

⇒ 25 : 10 : 50

÷5

5 : 2 : 10

5 : 2 : 10

(Total for Question 9 is 3 marks)

10 Adam gets a bonus of 30% of £80
Katy gets a bonus of £28

Work out the difference between the bonus Adam gets and the bonus Katy gets.

Adam: £80 × 0.3 = £24 bonus

Katy: £28

28 − 24 = 4

£ 4

(Total for Question 10 is 3 marks)

11 Andy went on holiday to Canada.
His flights cost a total of £1500

Andy stayed for 14 nights.
His hotel room cost $196 per night. → 14 × 196 = $2744

Andy used wifi for 12 days.
Wifi cost $5 per day. → 12 × 5 = $60

The exchange rate was $1.90 to £1 → $1.90 = £1

(*a*) Work out the total cost of the flights, the hotel room and wifi.
Give your answer in pounds.

2744 + 60 = $2804

$1.90 = £1

→ $1 = $\frac{1}{1.90}$ = £0.5263

⇒ $2804 = 0.526 × 2804
= £1475.79

1475.79 + 1500
= £2975.79

£ 2975.79

(5)

(*b*) If there were fewer dollars to £1, what effect would this have on the total cost, in pounds, of Andy's holiday?

the total cost would increase

(1)

(Total for Question 11 is 6 marks)

12 Remi invests £600 for 5 years in a savings account.
By the end of the 5 years he has received a total of £75 simple interest.

Work out the annual rate of simple interest.

interest per year = total interest ÷ years
= 75 ÷ 5
= £15

annual rate = $\frac{\text{interest per year}}{\text{amount saved}}$ = $\frac{15}{600}$ × 100

= 2.5 %

.....2.5.....%

(Total for Question 12 is 3 marks)

13 (*a*) Write 7357 correct to 3 significant figures.

.....7360.....

(1)

(*b*) Work out $\frac{\sqrt{17+4^2}}{7.3^2}$ = $\frac{\sqrt{17+16}}{7.3^2}$ = $\frac{\sqrt{33}}{7.3^2}$

Write down all the figures on your calculator display.

.....0.10779813560776 9.....

(2)

(Total for Question 13 is 3 marks)

14 Emily buys a pack of 12 bottles of water.
The pack costs £5.64

Emily sells all 12 bottles for 50p each.

Work out Emily's percentage profit.
Give your answer correct to 1 decimal place.

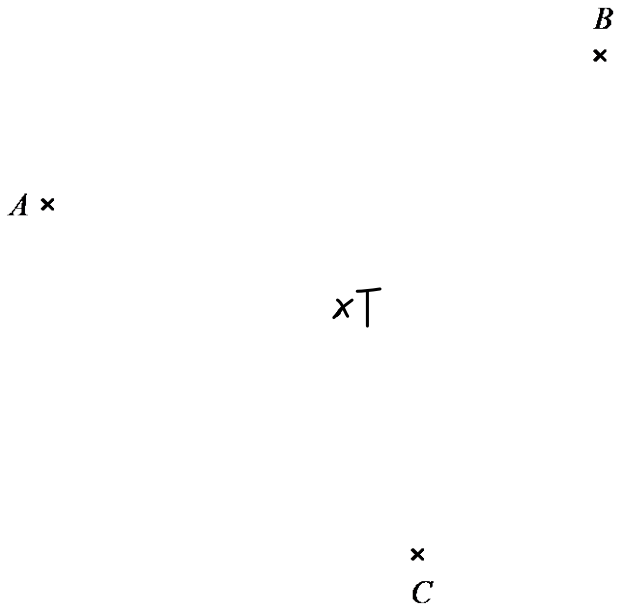
12 × 0.5 = £6.00

percentage profit = $\frac{6.00-5.64}{5.64}$ × 100 = 6.38 %

.....6.4.....%

(Total for Question 14 is 3 marks)

15 *A*, *B* and *C* are three points on a map.



1 cm represents 100 metres.

Point *T* is 250 metres from point *A*.
Point *T* is equidistant from point *B* and point *C*.

On the map, show one of the possible positions for point *T*.

1cm = 100m
2.5cm = 250m

(Total for Question 15 is 3 marks)

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16 (*a*) Write 4.7×10^{-1} as an ordinary number.

0.47

(1)

(*b*) Work out the value of $(2.4 \times 10^3) \times (9.5 \times 10^5)$
Give your answer in standard form.

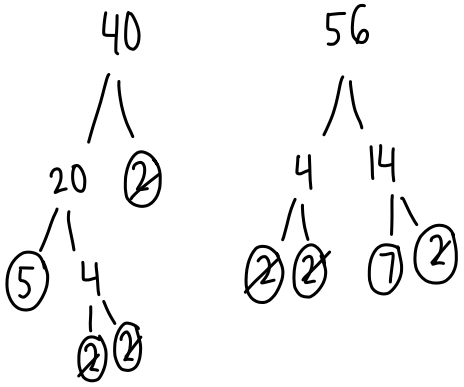
$(2.4 \times 9.5) \times (10^3 \times 10^5) = 22.8 \times 10^8 = 2.28 \times 10^9$

2.28×10^9

(2)

(Total for Question 16 is 3 marks)

17 (*a*) Find the lowest common multiple (LCM) of 40 and 56



HCF = 2^3 = 8

LCM = 8 × 5 × 7

= 280

.....280.....

(2)

$A = 2^3 \times 3 \times 5$ $B = 2^2 \times 3 \times 5^2$

(*b*) Write down the highest common factor (HCF) of *A* and *B*.

A = 120 B = 300

HCF = 2 × 2 × 3 × 5

= 60

.....60.....

(1)

(Total for Question 17 is 3 marks)

18 Andy cycles a distance of 30 km at an average speed of 24 km/h.
He then runs a distance of 12 km at an average speed of 8 km/h.

Work out the total time Andy takes.
Give your answer in hours and minutes.

$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

$$\text{time} = \frac{30}{24} = 1.25 \text{ hours} \quad \text{and} \quad \frac{12}{8} = 1.5 \text{ hours}$$

$$\text{Total time} = 1.25 + 1.5$$
$$= 2.75 \text{ hours}$$

$$(60 \times 2) + (0.75 \times 60)$$
$$\Rightarrow 2 \text{ hours and } 45 \text{ mins}$$

.....2..... hours .....45..... minutes

(Total for Question 18 is 3 marks)

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19 A number, m, is rounded to 1 decimal place.
The result is 9.4

Complete the error interval for m.

.....9.35..... $\leqslant m <$ .....9.45.....

(Total for Question 19 is 2 marks)

TOTAL FOR PAPER IS 52 MARKS