Additional Assessment Materials
Summer 2021

Pearson Edexcel

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

Topic 1: Number and Ratio (Test 2)

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- Additional Assessment Materials have come from past papers both published (those materials available publicly) and unpublished (those currently under padlock to our centres) presented in a different format to allow teachers to adapt them for use with candidate.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

1 Work out $2 + 7 \times 10$

$2 + 70 = 72$

72

(Total for Question 1 is 1 mark)

---

2 Here are four numbers.

–9 –2 2 9

Write one of these numbers in each box to make a correct calculation.

$\boxed{-9} + \boxed{2} = -7$

(Total for Question 2 is 1 mark)

---

3 Write 20% as a fraction.

$\frac{20}{100} = \frac{2}{10} = \frac{1}{5}$

$\frac{1}{5}$

(Total for Question 3 is 1 mark)

---

4 3 kg of meat costs £54.
Nina buys 2 kg of the meat.

Work out how much Nina pays.

$3kg = £54$

$\rightarrow 1kg = \frac{54}{3} = £18$

$\Rightarrow 2kg = 18 \times 2 = 36$

£ 36

(Total for Question 4 is 2 marks)

5 Here is a list of four fractions.

$$\frac{4}{16} \qquad \frac{2}{8} \qquad \frac{15}{60} \qquad \frac{3}{9}$$

One of these fractions is **not** equivalent to $\frac{1}{4}$

Write down this fraction.

$\frac{3}{9}$

(Total for Question 5 is 1 mark)

---

6 Write down the first even multiple of 7

7, 14, 21

14

(Total for Question 6 is 1 mark)

---

7 (*a*) Work out $3 \times 5 + 7$

15 + 7 = 22

22

(1)

(*b*) Work out 2^3

2 × 2 × 2 = 8

8

(1)

(*c*) Write brackets ( ) in this statement to make it correct.

$7 \times (2 + 3) = 35$

(1)

(Total for Question 7 is 3 marks)

8 Write down an example to show that each of the following two statements is **not** correct.

(*a*) The factors of an even number are always even.

even number = 16

factors of 16 = 1, 2, 4, 8

16 ; 1 is not even

(1)

(*b*) All the digits in odd numbers are odd.

21 : 2 is not odd even though 21 is odd

21

(1)

(Total for Question 8 is 2 marks)

---

9 There are some chocolates in a box.

$\frac{1}{4}$ of the chocolates contain nuts.

The rest of the chocolates do not contain nuts.

Write down the ratio of the number of chocolates that contain nuts to the number of chocolates that do not contain nuts.
Give your answer in the form 1 : *n*

$\frac{1}{4} : \frac{3}{4} \rightarrow 4 : 12 \rightarrow 1 : 3$

$\Rightarrow 1 : 3$

1 : 3

(Total for Question 9 is 2 marks)

10 Ruth left her home at 9 am and walked to the library.
She got to the library at 10 30 am.
Ruth walked at a speed of 4 mph.

(*a*) Work out the distance Ruth walked.

distance = s x t = 4 x 1·5 = 6

.....6..... miles
(2)

Ruth got to the library at 10 30 am.
She stayed at the library for 50 minutes.
Then she walked home.

Ruth took $1\frac{1}{4}$ hours to walk home.

10 : 30 + 50 mins = 11 : 20

$1\frac{1}{4}$ hours = 60 mins + 15 mins ($\frac{1}{4}$ of an hour)
= 11 : 20 + 60 + 15 = 12 : 35

(*b*) At what time did Ruth get home?

.....12 : 35.....
(2)

(Total for Question 10 is 4 marks)

---

11 Work out 74 × 58

	70	4
50	3500	200
8	560	32

3500
560
200
32
1
4292

.....4292.....
(Total for Question 11 is 2 marks)

---

12 (*a*) Write down the value of $\sqrt{64}$ = 8

.....8.....
(1)

(*b*) Work out the value of 5^3

.....125.....
(1)

(Total for Question 12 is 2 marks)

13 (*a*) A bag contains red counters and blue counters only.

number of red counters : number of blue counters = 3 : 4

Write down the fraction of the counters that are red.

$\frac{3}{7}$

.....

(1)

(*b*) Write the ratio 12 : 30 in the form 1 : *n*

$12 : 30$

$\Rightarrow 4 : 10$

$\Rightarrow 2 : 5 \rightarrow 1 : \frac{5}{2}$

$1 : \frac{5}{2}$

.....

(2)

(Total for Question 13 is 3 marks)

---

14 In a shop, a TV has a normal price of £500
The shop has a sale.

On Monday, the normal price of the TV is reduced by $\frac{1}{10}$ to give the sale price.

On Tuesday, the sale price of the TV is reduced by 20%

Chris wants to buy the TV.
He has £400 to spend on the TV.

Does Chris have enough money to buy the TV on Tuesday?
You must show how you get your answer.

MONDAY: $500 \times \frac{1}{10} = 50 \Rightarrow$ £450 = sale price

TUESDAY: $450 \times \frac{2}{10} = 90 \Rightarrow$ £450 − 90 = £360

so yes, Chris has enough money to buy the TV on Tuesday.

(Total for Question 14 is 5 marks)

15 Harry, Regan and Kelan share £450 in the ratio 2 : 5 : 3

$3 + 5 + 2 = 10$

How much money does Kelan get?

Kelan gets $\frac{3}{10}$ of £450

£ 135

(Total for Question 15 is 2 marks)

16 Here is a list of ingredients for making 16 flapjacks.

Ingredients for 16 flapjacks
120 g butter 140 g brown sugar 250 g oats 2 tablespoons syrup

Jenny wants to make 24 flapjacks.

Work out how much of each of the ingredients she needs.

$24 \div 16 = 1.5$

$120 \times 1.5 = 180$

$140 \times 1.5 = 210$

$250 \times 1.5 = 375$

$2 \times 1.5 = 3$

butter 180 g

brown sugar 210 g

oats 375 g

syrup 3 tablespoons

(Total for Question 16 is 3 marks)

17 (*a*) Work out $2\frac{1}{7} + 1\frac{1}{4}$

$= \frac{15}{7} + \frac{5}{4}$

$= \frac{60}{28} + \frac{35}{28} = \frac{95}{28}$

$\frac{95}{28}$

(2)

(*b*) Work out $1\frac{1}{5} \div \frac{3}{4}$

Give your answer as a mixed number in its simplest form.

$\frac{6}{5} \div \frac{3}{4} = \frac{6}{5} \times \frac{4}{3} = \frac{24}{15} = 1\frac{9}{15} = 1\frac{3}{5}$

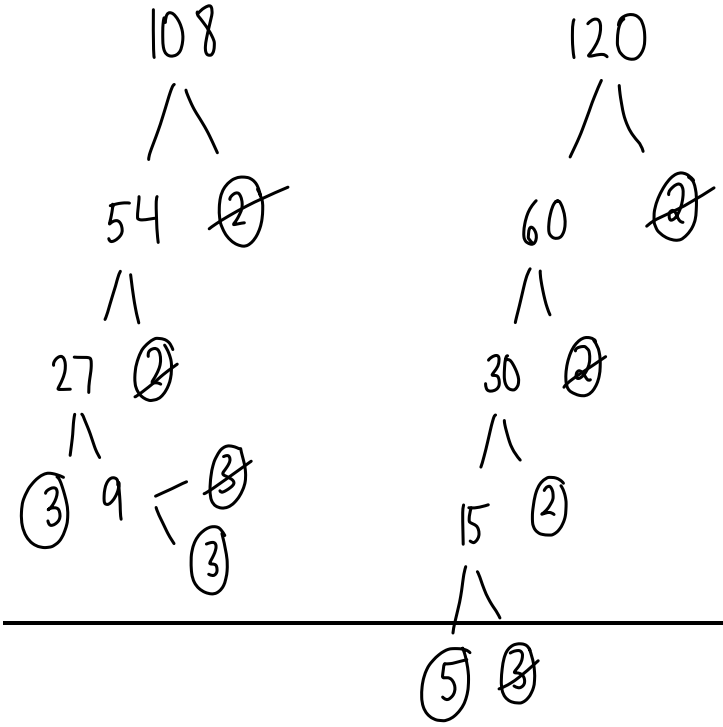
$1\frac{3}{5}$

(2)

(Total for Question 17 is 4 marks)

---

18 Find the Lowest Common Multiple (LCM) of 108 and 120



HCF = 2 × 2 × 3

= 12

LCM = 12 × 2 × 3^2 × 5

= 1080

1080

(Total for Question 18 is 3 marks)

19 A bonus of £2100 is shared by 10 people who work for a company.
40% of the bonus is shared equally between 3 managers.
The rest of the bonus is shared equally between 7 salesmen.

One of the salesmen says,

"If the bonus is shared equally between all 10 people I will get 25% more money."

Is the salesman correct?
You must show how you get your answer.

$2100 \times \frac{4}{10} = 840 \rightarrow 840 \div 3 = 280$ for each manager

$2100 - 840 = 1260$ left for salesmen

$1260 \div 7 = 180$ for each salesman

$2100 \div 10 = 210$

$\%$ difference $= \frac{210 - 180}{180} \times 100 = \frac{30}{180} \times 100 = \frac{1}{6} \times 100 = 16.6\% < 25\%$

so the salesman is wrong.

$3\overline{)840} = 280$

$7\overline{)1260} = 180$

$6\overline{)1.0^{4}0^{4}0} = 0.166\ldots$

(Total for Question 19 is 5 marks)

---

20 A plane travels at a speed of 213 miles per hour.

Work out an estimate for the number of seconds the plane takes to travel 1 mile.

200 miles = 60 minutes

$1 \text{ mile} = \frac{60}{200} = \frac{6}{20} = \frac{3}{10}$

$\frac{3}{10}$ mins $= \frac{3}{10} \times 60$ seconds

$= 18$ seconds

18 ..... seconds

(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 50 MARKS