Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

MATHEMATICS **1112/01**

Paper 1 **April 2020**

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and learners, to indicate the requirements of the examination. However, we have not been able to adjust it to reflect the full range of answers that would have been seen as a part of the normal moderation and marking process, and it does not necessarily contain all the possible alternatives that might have arisen. Cambridge will not enter into discussions about the mark scheme.

This document has **14** pages. Blank pages are indicated.

General guidance on marking

This section gives general guidelines on marking learner responses that are not specifically mentioned in the mark scheme. **Any guidance specifically given in the mark scheme supersedes this guidance.**

Difference in printing

It is suggested that schools check *their* printed copies for differences in printing that may affect the answers to the questions, for example in measurement questions.

Mark scheme annotations and abbreviations

M1	method mark
A1	accuracy mark
B1	independent mark
FT	follow through after error
dep	dependent
oe	or equivalent
cao	correct answer only
isw	ignore subsequent working
soi	seen or implied

Brackets in mark scheme

When brackets appear in the mark scheme this indicates extra information that is not required but may be given.

For example:

Question	Answer	Mark	Further Information
5	19.7 or 19.6(58)	**1**	

This means that 19.6 is an acceptable truncated answer even though it is not the correct rounded answer.

The … means you can ignore any numbers that follow this; you do not need to check them.

Accept
- any correct rounding of the numbers in the brackets, e.g. 19.66
- truncations beyond the brackets, e.g. 19.65.

Do not accept
- 19.68 (since the numbers in brackets do not have to be present but if they are, they should be correct).

Number and place value

The table shows various general rules in terms of acceptable decimal answers.

Decimal Answers
Accept omission of leading zero if answer is clearly shown, e.g. **.675**
Accept tailing zeros, unless the question has asked for a specific number of decimal places or significant figures, e.g. **0.7000**
Accept a comma as a decimal point if that is the convention that you have taught the learners, e.g. **0,638**

Units

For questions involving quantities, e.g. length, mass, money, duration or time, correct units must be given in the answer. Units are provided on the answer line unless finding the units is part of what is being assessed.

The table shows acceptable and unacceptable versions of the answer 1.85 m.

	Accept	**Do not accept**
If the unit is given on the answer line, e.g. ..... m	Correct conversions, provided the unit is stated unambiguously, e.g. ..... 185 cm..... m (this is unambiguous since the unit cm comes straight after the answer, voiding the m which is now not next to the answer)	.....185..... m .....1850.....m etc.
If the question states the unit that the answer should be given in, e.g. 'Give your answer in metres'	1.85 1 m 85 cm	185; 1850 Any conversions to other units, e.g. 185 cm

Money

In addition to the rules for units, the table below gives guidance for answers involving money. The table shows acceptable and unacceptable versions of the answer $0.30.

	Accept	**Do not accept**
If the amount is in dollars and cents, the answer should be given to two decimal places	$0.30 For an integer number of dollars it is acceptable not to give any decimal places, e.g. $9 or $9.00	$0.3 $09 or $09.00
If units are not given on the answer line	Any unambiguous indication of the correct amount, e.g. 30 cents; 30 c $0.30; $0-30; $0=30; $00:30	30 or 0.30 without a unit $30; 0.30 cents Ambiguous answers, e.g. $30 cents; $0.30 c; $0.30 cents (as you do not know which unit applies because there are units either side of the number)
If $ is shown on the answer line	All unambiguous indications, e.g. $.....0.30.....; $.....0-30.....; $.....0=30.....; $.....00:30.....	$.....30..... Ambiguous answers, e.g. $.....30 cents.....; $.....0.30 cents..... **unless** units on the answer line have been deleted, e.g. ~~$~~.....30 cents.....
If cents is shown on the answer line	.....30.....cents	.....0.30.....cents Ambiguous answers, e.g. .....$30 .....cents; .....$0.30 .....cents **unless** units on the answer line have been deleted, e.g. .....$0.30.....~~cents~~

Duration

In addition to the rules for units, the table below gives guidance for answers involving time durations. The table shows acceptable and unacceptable versions of the answer 2 hours and 30 minutes.

Accept	Do not accept
Any unambiguous indication using any reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs), e.g. 2 hours 30 minutes; 2 h 30 m; 02 h 30 m Any correct conversion with appropriate units, e.g. 2.5 hours; 150 mins **unless** the question specifically asks for time given in hours and minutes	Incorrect or ambiguous formats, e.g. 2.30; 2.3; 2.30 hours; 2.30 min; 2 h 3; 2.3 h (this is because this indicates 0.3 of an hour – i.e. 18 minutes – rather than 30 minutes) 02:30 (as this is a 24-hour clock time, not a time interval) 2.5; 150

Time

The table below gives guidance for answers involving time. It shows acceptable and unacceptable versions of the answer 07:30.

	Accept	Do not accept
If the answer is required in 24-hour format	Any unambiguous indication of correct answer in numbers, words or a combination of the two, e.g. 07:30 with any separator in place of the colon, e.g. 07 30; 07,30; 07-30; 0730	7:30 7:30 am 7 h 30 m 7:3 730 7.30 pm 073 07.3
If the answer is required in 12-hour format	Any unambiguous indication of correct answer in numbers, words or a combination of the two, e.g. 7:30 am with any separator in place of the colon, e.g. 7 30 am; 7.30 am; 7-30 am 7.30 in the morning Half past seven (o'clock) in the morning Accept am or a.m.	Absence of am or pm 1930 am 7 h 30 m 7:3 730 7.30 pm

Algebra

The table shows acceptable and unacceptable versions of the answer $3x - 2$.

Accept	Do not accept
$x3 - 2$; $3 \times x - 2$	$3x + -2$ if it is supposed to be in simplest form
Case change in letters	
Changes in letters as long as there is no ambiguity	

Accept extra brackets when factorising, e.g. $5(x + (3 + y))$.

Teachers must mark the final answer given. If a correct answer is seen in working but final answer is given incorrectly then the final answer must be marked. If no answer is given on the answer line then the final line of the working can be taken to be the final answer.

Inequalities

The table shows acceptable and unacceptable versions of various answers.

For the following	Accept	Do not accept
For $6 \leq x < 8$	$[6, 8)$	$< x <$
For $x \leq -2$	$(-\infty,-2]$	$x < -2$
For $x > 3$	$(3, \infty)$ $3 < x$	Just '3' written on the answer line, even if $x > 3$ appears in the working

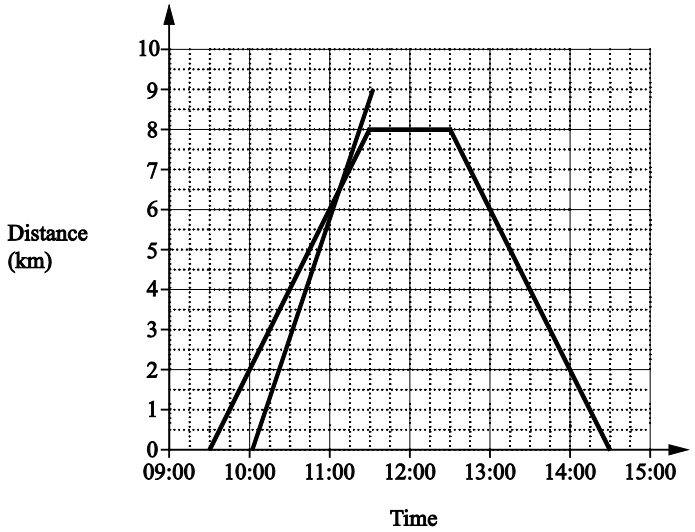
Plotting points

The table shows acceptable and unacceptable ways to plot points.

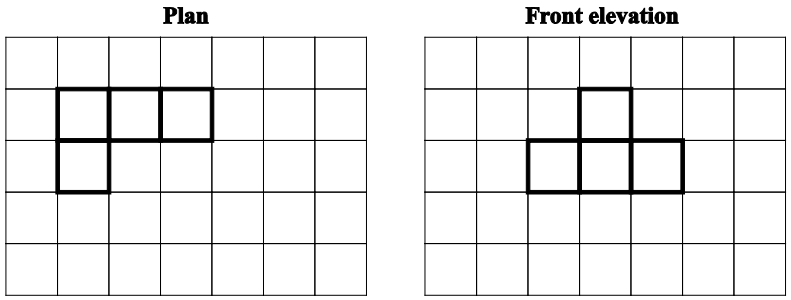
Accept	Do not accept
Crosses or dots plotted within $\pm\frac{1}{2}$ square of the correct answer. The graph line passing through a point implies the point even though there is no cross.	A horizontal line and vertical line from the axes meeting at the required point.

Question	Answer	Mark	Further Information
1	36	**1**	
2	x^9	**1**	
3(a)	$4\frac{2}{3}$	**1**	
3(b)	25(%)	**1**	
4	$-7p$	**1**	
5	(x =) 8	**1**	
6	(–2, –1)	**1**	
7(a)	5	**1**	
7(b)	Coffee	**1**	
8	500 (mm^2)	**1**	
9(a)	10^4 **and** 100 000	**1**	
9(b)	120	**1**	

Question	Answer	Mark	Further Information
10(a)	C H A N E	**1**	Accept in any order. Do not allow more than one C.
10(b)	$\frac{2}{6}$	**1**	Accept equivalent fraction, decimal or percentage. Accept 0.33 or better. Do not accept answer as a ratio (2:6) or in words.
11	Gabriella = 18 (kg) Pierre = 48 (kg)	**3**	
	[(110 + 154) ÷ 4] ÷ 11	**M2**	Implied by 6 or one correct mass found.
	(110 + 154) ÷ 4	**M1**	Implied by 66 Only award M1 if M2 not given.
12	Ticks or indicates the box for *correct* **and** shows 30 students (School A) and 30 (School B).	**2**	
	Award 1 mark for: • writes that 15% of 200 is the same as 25% of 120 • 30 seen	**M1**	No marks if box ticked with no supporting work.
13	(6, 11.5)	**1**	11.5 oe
14	42 **and** 0	**1**	Both numbers correctly placed required to get the mark.

Question	Answer	Mark	Further Information
15	$\frac{3}{8}$	**2**	
	$\frac{63}{168}$ **or** $\frac{9}{24}$ **or** $\frac{21}{56}$	**B1**	
	$\frac{1}{12} \times \frac{9}{2}$ **or** $\frac{7}{4} \times \frac{3}{14}$ **or** $\frac{1}{4} \times \frac{3}{2}$	**M1**	Only award if B0 scored.
16(a)	4 (km / h)	**1**	
16(b)		**1**	A straight line from (10:00, 0) to (11:30, 9)

Question	Answer	Mark	Further Information
16(c)	11:00	**1**	Follow through from an incorrect diagram as long as the answer corresponds to the point where the lines cross. Allow a tolerance of $\frac{1}{2}$ square.
17	40 (cm)	**2**	Allow 40(.0...)
	27.72 **or** 12.28	**B1**	
	10×4 **or** $(6.93 \times 4) + (3.07 \times 4)$	**M1**	Only award if B0 scored.
18(a)	2.86	**1**	
18(b)	268.84	**1**	
19	rectangle with sides 6 cm and 3.5 cm	**2**	Tolerance ± 2 mm Any orientation
	1 side correct length **or** 6 **and** 3.5 seen	**B1**	Tolerance ± 2 mm
20	Both answers correct $7.4 + \boxed{-4.3} = 3.1$ $9.4 - -5.7 = \boxed{15.1}$	**2**	
	One answer correct	**B1**	

Question	Answer	Mark	Further Information
21	Any two correct reasons, e.g.: - Ask more people - Ask passengers, not just employees - Ask people throughout the day - Ask people in different months Ask people on different days in March	**2**	With no incorrect reasons.
	One correct reason	**B1**	Ignore incorrect reasons.
22		**2**	For plan : accept any orientation. Accept shading and internal lines. For front elevation : accept outline of shape only (no internal lines.)
	Plan or front elevation correct.	**B1**	
23	18:15 09:59 00:01	**2**	Do not accept 9:59
	One correct answer	**B1**	
24	4	**1**	Do not accept 4 cm or 1:4

Question	Answer	Mark	Further Information
25	True: ✓ / False: ✓ / 	**1**	
26	$\frac{3}{4}$	**2**	
	A correct method e.g. $\frac{2}{3}+\frac{\left(\frac{5}{6}-\frac{2}{3}\right)}{2}$ **or** $\left(\frac{2}{3}+\frac{5}{6}\right)\div 2$ **or** finding both $\frac{8}{12}$ and $\frac{10}{12}$	**M1**	M1 implied by an equivalent fraction e.g. $\frac{9}{12}$ or an incorrectly expressed fraction or a decimal e.g. $\frac{4.5}{6}$ or 0.75

Question	Answer	Mark	Further Information
27	27	**3**	
	$36 \times 50 \times 30$ **or** $60\,000 - 4 \times 50 \times 30$ **or** $60 - (4 \times 50 \times 30)/1000$ **or** $\frac{36}{40} \times 60$	**M2**	Implied by 54 000 Implied by 60 000 – 6000 Implied by 60 – 6 or 54 Allow equivalent in mℓ e.g $\frac{36}{40} \times 60\,000$ and equivalent fractions for $\frac{36}{40} \times 60$
	$4 \times 50 \times 30$ **or** $60 \div 2$ **or** $\frac{36}{40}$ **or** $\frac{18}{20}$ **or** $\frac{9}{10}$	**M1**	Allow $60\,000 \div 2000$ Only award M1 if M2 not given.
28	$9 \times 0.1,\ 9 \times 0.85,\ 9 \div 0.5,\ 9 \div 0.18$	**1**	Condone correct values e.g. 0.9, 7.65, 18, 50
29	corresponding **and** d **and** they are angles on a straight line	**2**	Condone incorrect spelling.
	two out of three statements correct.	**B1**	

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