Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

MATHEMATICS **1112/01**

Paper 1 **April 2021**

MARK SCHEME

Maximum Mark: 50

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

Mark scheme annotations and abbreviations

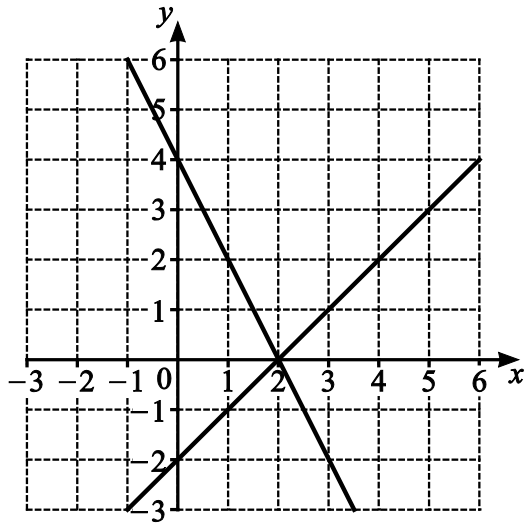
M1	method mark
A1	accuracy mark
B1	independent mark
FT	follow through after error
dep	dependent
oe	or equivalent
cao	correct answer only
isw	ignore subsequent working
soi	seen or implied

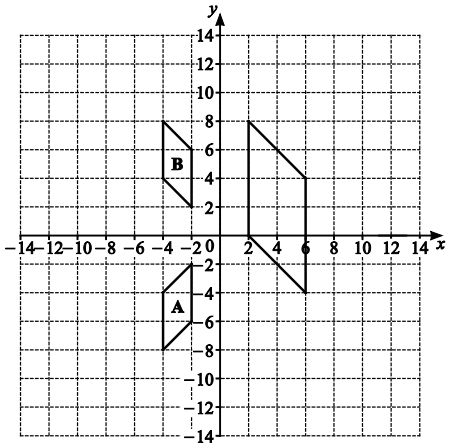
Question	Answer	Marks	Further Information
1(a)	3.6	**1**	Accept $\frac{18}{5}$ or $3\frac{3}{5}$ but not $\frac{36}{10}$ or $3\frac{6}{10}$
(b)	0.4	**1**	Accept $\frac{2}{5}$ but not $\frac{4}{10}$
2(a)	$n+4$ **and** $5n-3$	**1**	Both needed for 1 mark.
(b)	$n \rightarrow \boxed{\div 4} \rightarrow \boxed{+2} \rightarrow 7$	**1**	Accept: $n \rightarrow \boxed{\frac{n}{4}} \rightarrow \boxed{\frac{n}{4}+2} \rightarrow 7$
(c)	20	**1**	
3	1124.8 **and** 11 324	**2**	Accept $\frac{5624}{5}$ but not $\frac{11248}{5}$
	One correct answer	B1	
4	200 **or** 199 **or** 198.6 **or** 198.56	**1**	Do **not** accept any other answer.
5	3.737	**1**	
6	(a =) 5 cao	**1**	Do **not** accept $\frac{5}{12}$
7	$\frac{3}{20}$ cao	**1**	

Question	Answer	Marks	Further Information
8(a)	42 (minutes)	**1**	
(b)	09:13 **or** 9.13 am	**1**	Do **not** accept use of pm in (b) or (c). Accept any separator e.g. semi-colon, comma, colon, dot, space or no space in (b) and (c).
(c)	10:34 **or** 10.34 am	**1**	
9	100 (miles)	**1**	Accept 99–100
10	2 (cm)	**2**	
	For finding the volume of cuboid A 90 (cm^3) **or** $6 \times 3 \times 5 = 9 \times 5 \times h$ or better	M1	Accept any correct method. Or better e.g.: $6 \times 3 \div 9$ **or** $6 \times 3 \times 5 \div (9 \times 5)$
11	True / False ☑ / ☐ ☐ / ☑ ☐ / ☑ ☑ / ☐	**1**	Accept any unambiguous indication. All correct for 1 mark.

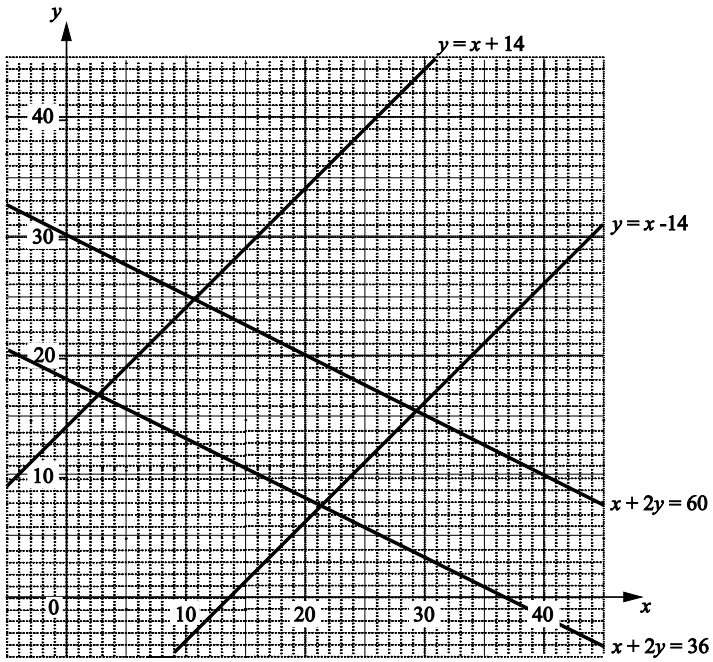
Question	Answer	Marks	Further Information
12	Shape drawn accurately with a tolerance of ± 2 mm.	**3**	For 3 marks they should have correct construction arcs, a ruled triangle and a semi-circle drawn with compasses. Don't accept full circle drawn, condone extension of arc beyond A and C.
	Triangle drawn accurately with a tolerance of ± 2 mm	B2	For 2 marks they should have correct construction arcs and a ruled triangle.
	AB and BC correct but no construction arcs or incorrect construction arcs.	B1	If B2 not scored ± 2 mm
	Accurate semicircle drawn with compasses.	B1	Both B1 marks may be awarded. Don't accept full circle drawn, condone extension of arc beyond A and C.
13(a)	$(-1, -1)$ **or** $(5, -3)$ **or** $(5, 9)$	**1**	
(b)	$(-1, -1)$ **or** $(5, -3)$ **or** $(5, 9)$	**1**	Only give the mark for a different correct point from part **(a)**.
14	$\frac{11}{12}$ cao	**1**	
15	8.5 **and** 9	**2**	Accept $+9$, 9.0
	One correct answer	B1	
16	Ticks B **and** has figures 1125 **and** 1200	**2**	Accept in kg or a mixture of kg and g.
	Finds one correct value.	B1	

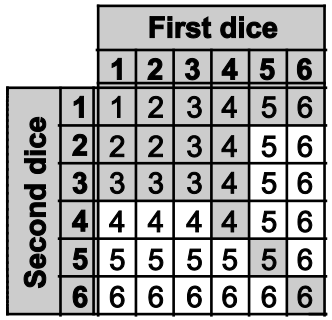
Question	Answer	Marks	Further Information
17	$2x^2 + 9x - 6$	**3**	
	$x^2 + 2x + 3x + 6$ **and** $x^2 - 2x + 6x - 12$ or better	M2	With at most one incorrect term e.g. works out the area of Shape *A* and Shape *B* with 7 terms correct out of 8, note $5x$ counts as two terms correct for *A* and $4x$ counts as 2 terms correct for *B*.
	$x^2 + 2x + 3x + 6$ or better $x^2 + 5x + 6$ **or** $x^2 - 2x + 6x - 12$ or better $x^2 + 4x - 12$	M1	Works out the area of either Shape *A* or Shape *B* with 3 terms correct out of 4, note $5x$ counts as two terms correct for *A* and $4x$ counts as 2 terms correct for *B*.
18	4	**1**	
19(a)	11	**2**	
	For two correct divisions from: $14 \div 3$ $22 \div 10$ $27 \div 12$	M1	Implied by 4.7 or 4.6 or better e.g. 4.66, $4.\dot{6}$, $4\frac{2}{3}$ and 2.2, $2\frac{1}{5}$, 2.2(5) or better e.g. 5, 3, 3. Accept any two correct values for M1.
(b)	8	**1**	
20	Age (of student) **and** Amount of money	**1**	Accept school year. Accept any reference to money e.g. amount of pocket money, how much money in the bank, earnings. Accept answers in either order.

Question	Answer	Marks	Further Information
21(a)	$y = x + 2$ $y = 2x + 2$ $y = -2$ (circled) $y = x - 2$ $y = 2x - 2$	**1**	Accept any clear indication.
(b)	x: 0, **2**, 3 y: **4**, 0, –2	**1**	Both correct.
(c)	A straight line joining at least (0, 4) to (3, –2) 	**1**	Mark intention e.g. a line through (0, 4) and (2, 0) that misses (3, –2) by less than half a square.

Question	Answer	Marks	Further Information
22(a)	Reflection, $y = 0$ **or** reflection, x-axis	**2**	If more than one transformation mentioned award 0.
	reflection	B1	
	$y = 0$ **or** x-axis	B1	
(b)	Correct shape with coordinates $(2, 0)$, $(2, 8)$, $(6, 4)$ and $(6, -4)$  	**2**	
	3 coordinates plotted correctly **or** the shape is the correct size and orientation but positioned incorrectly **or** a correct enlargement scale factor 3, centre $(-10, 8)$	B1	Allow ends of rays to imply coordinates.

Question	Answer	Marks	Further Information
23	True / False / You cannot tell ☐ ✓ ☐ ✓ ☐ ☐ ☐ ✓ ☐ ☐ ☐ ✓	**2**	Accept any clear indication.
	For 3 correctly placed ticks.	B1	

Question	Answer	Marks	Further Information
24	(x =) any value between 2 and 3 inclusive **and** (y =) any value between 16 and 17 inclusive.	**2**	
	For x **or** y correct. **or** Correct intersection is indicated on the graph (the one closest to the y-axis). **or** correctly labelling any 2 lines  	B1	

Question	Answer	Marks	Further Information
25(a)		**2**	
	For at least 14 correct entries.	B1	i.e. no more than 5 wrong
(b)	$\frac{20}{36}$ or equivalent	**1**	FT from their diagram if their diagram is fully completed, i.e. $\frac{\text{number of values greater than 4}}{36}$ oe Correct equivalents include $\frac{10}{18}$, $\frac{5}{9}$, $0.\dot{5}$, 0.56, 0.555, 55.6%, 55.5%. 56%