Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

MATHEMATICS **1112/01**

Paper 1 **October 2020**

MARK SCHEME

Maximum Mark: 50

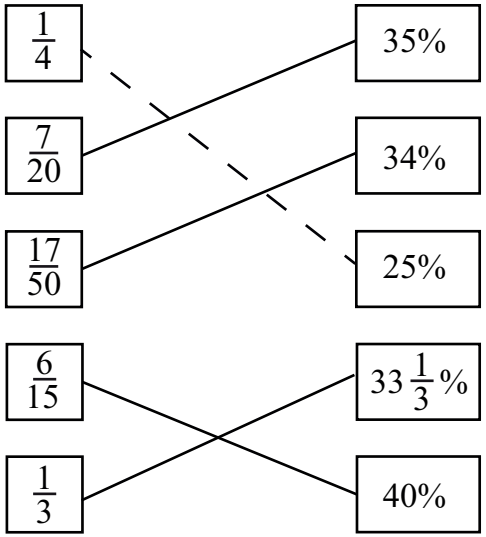
Published

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.

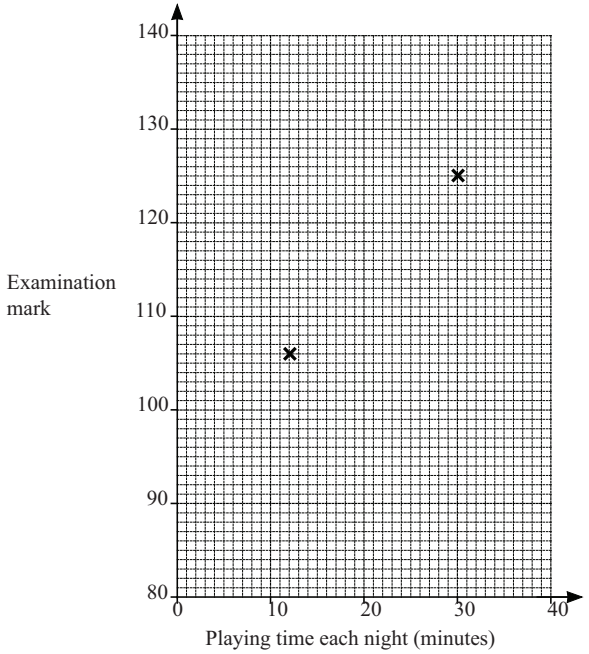
Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

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

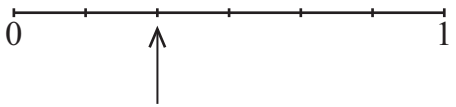
Question	Answer	Marks	Further Information
1	–23 (°C)	**1**	
2		**2**	
	2 or 3 correct	**B1**	
3	(–1, –2)	**1**	Both correct for the mark.

Question	Answer	Marks	Further Information
4(a)	$\frac{3}{10}$ cao	**1**	Do **not** accept equivalent decimals or percentages.
4(b)	70(%) cao	**1**	Do **not** accept equivalent decimals or fractions.
5	m^2 kg l	**1**	

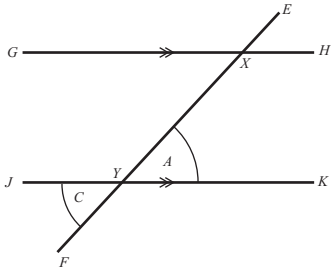
Question	Answer	Marks	Further Information
6 (a)	Both points plotted in correct positions, i.e.  	**1**	error = 0 marks, e.g. extra point plotted
6 (b)	A response that indicates that there is a positive correlation between the variables, e.g. ● positive correlation ● students who play longer score higher marks	**1**	Accept positive relationship. Do **not** accept 'positive' on its own.

Question	Answer	Marks	Further Information
7	$6\frac{1}{7}$	**1**	
8	$2(n+1)$	**1**	Accept equivalent expressions e.g. $2n+2$, (n+1) x 2 Do **not** accept formulae or equations
9	(square numbers are) 9 **and** 36 and (factors of 18 are) 2 **and** 9 and (multiples of 4 are) 20 **and** 36	**3**	Accept reversed in each line.
	(square numbers are) 9 **and** 36	**B1**	
	(factors of 18 are) 2 **and** 9	**B1**	
	(multiples of 4 are) 20 **and** 36	**B1**	
10	(10^2) 10^4 10^6 10^5	**2**	
	2 correct answers	**B1**	

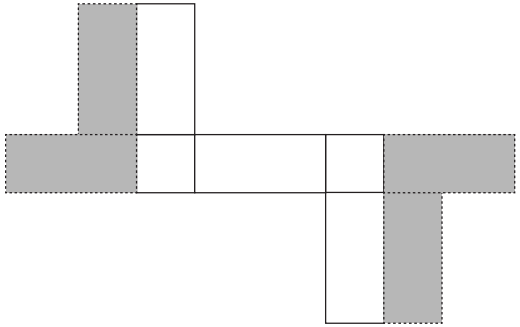
Question	Answer	Marks	Further Information
11(a)	1152	**1**	
11 (b)	1.104	**1**	
11 (c)	480	**1**	
12	f^5 **and** $6g^3$	**2**	
	f^5 **or** $6g^3$	**B1**	
13	mark out of 10 on a test (circled) time taken to run a marathon mass of a bag of oranges average speed of a journey number of books sold (circled)	**1**	Accept any clear indication of the two correct responses selected.

Question	Answer	Marks	Further Information
14	132	**2**	
	$24 \div \frac{2}{11}$ or better	**M1**	e.g. $\frac{24}{1} \div \frac{2}{11}$, $\frac{264}{11} \div \frac{2}{11}$, $24 \times \frac{11}{2}$, $\frac{264}{2}$
15(a)	☑ ☐ ☑	**1**	Accept any unambiguous indication.
15 (b)		**1**	Accept any unambiguous indication.
16	$\frac{7}{33}$	**2**	
	$\frac{105}{495}$ **or** $\frac{21}{99}$ **or** $\frac{26}{33}$ **or** $\frac{35}{165}$	**B1**	

Question	Answer	Mark	Further Information
17 (a)	2 **and** 6 in table.	**1**	
17 (b)	Line drawn between (– 4, – 2) and (0, 6)	**2**	
	plotting (– 4, – 2) and *their* points from **(a)** **or** for a line with gradient 2 **or** for a line crossing the y-axis at 6	**B1**	
17 (c)	x between – 2.4 and – 2.5 **and** y between 1.1 and 1.2 **or** FT x and y values from *their* point of intersection accurate within 1 small square.	**1**	Condone values in range from an algebraic solution e.g. $-2\frac{3}{7}$ and $1\frac{1}{7}$
18	7 (cm)	**3**	
	$3(3x + 4) = 57$ oe	**M1**	oe could be e.g. $9x + 12 = 57$ $3x + 4 = 19$ $6x + 8 = 38$ $3x = 15$ $x = 5$
	$2x + 2 + a = 3x + 4$ oe or better	**M1**	oe could be e.g. $3x + 4 – (2x + 2) = a$ $2x + 2 + a = 19$ $6x + 6 + 3a = 57$ $12 + a = 19$ $8x + 10 + a = 57$ $a = x + 2$ implied by $x + 2$ on the answer line or diagram. Allow their numerical x for x in each case e.g. $2 \times$ *their* $x + 2 + a = 19$

Question	Answer	Marks	Further Information
19 (a)	Multiply by –2 oe	**1**	Accept equivalent rule, e.g. multiply by 2 and then change the sign. Accept x –2 Do **not** accept: • use of variable e.g. –2*n*, –2*x* • double and **add** a negative sign
19 (b)	–96 **and** 192	**1**	Both correct for 1 mark. No FT
20	52	**2**	
	either 16 associated with white or 24 associated with red **or** for (*r* : *w* : *y*) = 6 : 4 : 3 (or equivalent) **or** for sight of any multiple of 13	**B1**	
21		**2**	Accept another label if it is clear that it refers to alternate / corresponding.
	1 correct label	**B1**	Accept another label if it is clear that it refers to alternate / corresponding.

Question	Answer	Marks	Further Information
22	0.2295 (m^2)	**2**	
	0.0705 **or** 3000 seen	**B1**	
23	$5b(2a - b)$	**2**	
	Partial factorisation $5(2ab - b^2)$ **or** $b(10a - 5b)$ **or** $5b(2a - b)$ in working	**B1**	
24 (a)	C' plotted at (3, 5)	**1**	Ignore lack of label if position is clear. The sides of the triangle do not need to be drawn for the mark to be awarded.
24 (b)	(enlargement) (scale factor) 2 **and** (centre) (1, 1)	**2**	e.g. enlargement of 2 at (1, 1) Combinations of transformations score 0
	One element of the description.	**B1**	

Question	Answer	Marks	Further Information
25	Ticks Children **and** gives a correct reason, e.g. • The mode/ median/ mean/ average for children is higher. • The chart for children is centred more to the right. • More children ate a large amount of fruit. • Most adults didn't eat very much fruit. • Children ate 105 portions adults ate 56	**1**	Do **not** accept 'children eat more fruit.' Values may be seen by graph. If values are found, they must be correct: Adults: mode 2, median 2, mean $\frac{105}{30}$ or 3.5 Children: mode 3, median 3, mean $\frac{56}{30}$ or 1.867 (which may be rounded or truncated further e.g. 1.9)
26	Any one of the four possible positions, i.e. one of the shaded faces shown. 	**1**	