Cambridge Assessment International Education

Mathematics

Stage 8

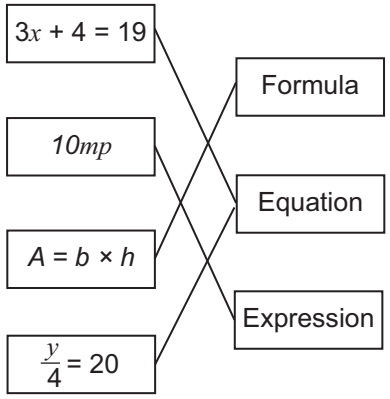
Paper 1

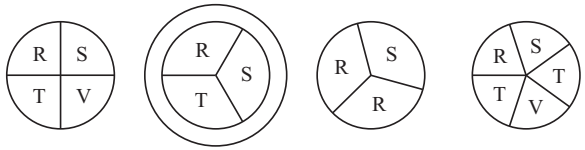
2023

Cambridge Lower Secondary Progression Test

Mark Scheme

3142_01_MS_6RP

Question	Answer	Marks	Part Marks	Guidance
1	Any two pairs of coordinates with coordinates (k, $k + 4$).	**1**		k does not need to be an integer.
2	1 **and** 49	**2**	Award 1 mark for each correct answer.	Do **not** accept 7^2
3	–10	**1**		
4		**1**		Accept any clear indication. All **four** lines correct for the mark.
5	56	**1**		Accept 56.3…
6(a)	3	**1**		
6(b)	7	**1**		

Question	Answer	Marks	Part Marks	Guidance
7	$5\frac{2}{7}$ correct answer only	**2**	Award 1 mark for $\frac{37}{7}$ **or** correct mixed number not in simplest form **or** correct starting point, e.g. $5\frac{4}{7} - \frac{2}{7}$, $8\frac{2}{7} - 3$	Accept less efficient methods, e.g. $\frac{60}{7} - \frac{23}{7}$
8		**1**		Accept any clear indication.
9	8 **and** 6	**1**		Both sentences correct for the mark.
10	$6(x + 4)$ final answer	**1**		Do **not** accept partially factorised, e.g. $3(2x + 8)$
11	(x =) 42 (because) alternate angles **and** (y =) 33 (because) corresponding angles	**2**	Award 1 mark for one correct sentence **or** 42 **and** 33 correct.	Accept omission of 'angles'.

Question	Answer	Marks	Part Marks	Guidance
12	**−5** **14** (−12) (−8) (−1) (6) **10** (−16) **3**	**2**	Award 1 mark for one row, column or diagonal total equal to -3 seen or implied.	1 mark implied by 14, 3 or 10 correct.
13	640 **and** 100	**2**	Award 1 mark for each correct answer.	
14	$(x =)55$	**1**		
15	$5t^3 + 10t^2 - 15t$ final answer	**1**		
16(a)	90 (cm^2)	**1**		
16(b)	35 (mm^2)	**2**	Award 1 mark for a correct method, e.g. $\frac{1}{2} \times 5 \times (4 + 10)$	Accept in stages, e.g. if split into rectangle and triangles where the sum of the base lengths of the triangles is 6

Question	Answer	Marks	Part Marks	Guidance
17(a)	enlargement **and** 3	**2**	Award 1 mark for each correct sentence.	
17(b)	Triangle at (–1, –3), (0, –5), (–2, –7).	**2**	Award 1 mark for correct size and orientation but wrong position **or** correct rotation of 270° clockwise.	270° clockwise triangle is at (–3, –3), (–2, 1), (–4, –1).
18	4	**1**		
19	$6p - 15$ **or** $3(2p - 5)$ final answer	**3**	Award 2 marks for correct unsimplified answer seen, e.g. $p + p - 3 + 4(p - 3)$ **or** Award 1 mark for $p - 3$ **or** $4 \times$ *their* $(p - 3)$.	

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Part Marks</th><th>Guidance</th></tr>
<tr><td>20</td><td>
<table>
<tr><th>Name</th><th>Sequence</th><th>Related to A</th><th>Rule</th><th>5th term</th></tr>
<tr><td>A</td><td>6, 10, 14, 18, …</td><td></td><td>Add 4</td><td>22</td></tr>
<tr><td>B</td><td>7, 11, 15, 19, …</td><td>Add 1 to each term in sequence A</td><td>Add 4</td><td>23</td></tr>
<tr><td>C</td><td>4, 8, 12, 16, …</td><td>Subtract 2 from each term (in sequence A)</td><td>Add 4</td><td>20</td></tr>
<tr><td>D</td><td>12, 20 28, 36, …</td><td>Double each term in sequence A</td><td>Add 8</td><td>44</td></tr>
<tr><td>E</td><td>−6, −10 −14, −18, …</td><td>Multiply each term (in sequence A) by −1</td><td>Subtract 4</td><td>−22</td></tr>
</table>
</td><td>3</td><td>Award 1 mark for each correct row.</td><td>Accept equivalent statements in column 3, e.g. take 2 from each term (in sequence A).

Accept for E column 3 ‘make each term negative’.

Ignore extra values in column 2</td></tr>
<tr><td>21</td><td>Any mixed number n where
$3.5 < n < 3\frac{9}{16}$ e.g. $3\frac{17}{32}$</td><td>1</td><td></td><td></td></tr>
<tr><td>22</td><td>$x + 1 \leq 5$</td><td>1</td><td></td><td>Accept any clear indication.</td></tr>
<tr><td>23</td><td>120</td><td>2</td><td>Award 1 mark for two correct out of
121
(–)13
$\sqrt{144}$ or 12</td><td></td></tr>
</table>

Question	Answer	Marks	Part Marks	Guidance
24	24 (cm)	**3**	Award 2 marks for correct method to find HCF, e.g. 240 **and** 168 correctly written as a product of primes or equivalent **or** answer $2^3 \times 3$ $240 = 2^4 \times 3 \times 5$ $168 = 2^3 \times 3 \times 7$ **or** Award 1 mark for 240 **or** 168 correctly written as a product of primes.	Accept factor trees or repeated division leading to correct prime factors instead of product of primes.

Question	Answer	Marks	Part Marks	Guidance
25(a)	2 | 4 6 8 3 | 0 3 6 8 4 | 2 5 6 5 | 1 Key 2 | 4 represents 2.4 m	**3**	Award 2 marks for a stem-and-leaf diagram with all 11 numbers in correct numerical order. **or** Award 1 mark for correct leaves but not in order or for two correct rows **and** Award 1 mark for correct key.	Any appropriate numbers may be used in the key (does not have to be 2 and 4). Accept equivalents, e.g. "=" in place of represents. The decimal point must be in the key, not in the stems.
25(b)	Correct comparison with supporting value, e.g. The people jumped further (on average) in August as the median in June is 3.6 m.	**2**	Award 1 mark for an incomplete comparison, e.g. • The median was lower in June. • They jumped further (on average) in August. • In June the median was 3.6 m (but in August it was 4.1 m). Follow through from the median from *their* diagram for 1 or 2 marks.	1 mark answers include: • Correct comparison with no median stated. • Correct median for June stated with no comparison ('but' is not a comparative word).

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Part Marks</th><th>Guidance</th></tr>
<tr><td>26</td><td><table><tr><th>Inside</th><th>Outside</th><th>A vertex</th><th>On the edge</th></tr><tr><td>(–3, 3)</td><td>(3, –3)
(–5, 6)</td><td>(–2, 5)</td><td>(–2, 3)</td></tr></table></td><td>2</td><td>Award 1 mark for three or four coordinates correctly placed.</td><td>Coordinates in Column 2 can be in either order.</td></tr>
<tr><td>27</td><td>0</td><td>1</td><td></td><td></td></tr>
</table>