Year 8 Autumn Higher Paper A

Question	Answer	Marks	Notes and guidance
1	24	2	Award 1 mark for sight of one share worked out as 8 or $40 \div 5$ or equivalent seen
	0.6 : 1	1	Accept $\frac{3}{5} : 1$
2	Accept 15 – 18 inclusive	2	Award 1 mark for line for reasonable attempt at line of best fit
	Any reasonable explanation e.g. • There is strong correlation • The points are close to a straight line	1	
	Any reasonable explanation e.g. • There is a non-linear relationship • There is no correlation, but there is a different pattern	1	
3	8	1	
	80	1	

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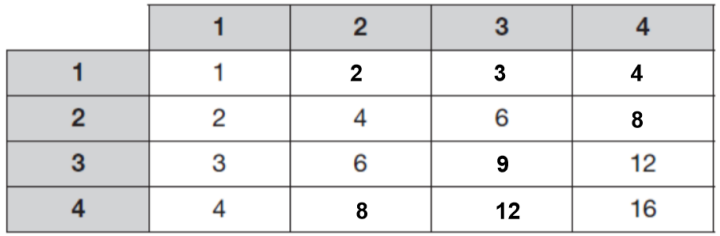
4	Completes table correctly  	1	
	$\frac{3}{16}$	1	Accept any correct equivalent. Follow through from their table.
	$\frac{1}{4}$	1	Accept any correct equivalent. Follow through from their table.
5	- 4, - 4 and 4	2	Award 1 mark for any two values correct
	Plots points correctly and joins with reasonably smooth curve	2	Award 1 mark for at least 5 of their points plotted correctly
6	States "no" and gives a valid reason e.g. • He drive three times as far as she did • His distance is three times greater	1	
	180 60	2	Award 1 mark for attempt at 120 ÷ 2
7	$\frac{5}{6}$ 12	2 1	Award 1 mark for correct method e.g. attempt at $\frac{2}{3} \times \frac{5}{4}$

	$\frac{5b}{3}$	1	
8	Indicates middle graph only	1	Accept any clear indication e.g. tick, circle, underlined
	48 (miles)	1	
	40 (minutes)	1	
9	3	1	
	(0, 1)	1	
	(1, 2)	1	
10	$4\frac{7}{12}$	3	Award 2 marks for fully correct multiplication of $3\frac{2}{3}$ and $1\frac{3}{4}$ (i.e. $\frac{77}{12}$ or equivalent) OR Fully correct method with no more than one arithmetical error OR $\frac{55}{12}$ Award 1 mark for correct method to multiply $3\frac{2}{3}$ by either $1\frac{1}{4}$ or $1\frac{3}{4}$

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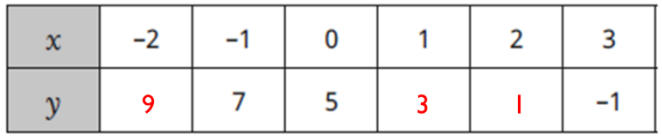
<table>
<tr>
<td>11</td>
<td>Completes table correctly
<table>
<tr><th></th><th>London</th><th>Manchester</th><th>York</th><th>Total</th></tr>
<tr><td>Year 7</td><td>65</td><td>50</td><td>38</td><td>153</td></tr>
<tr><td>Year 8</td><td>32</td><td>40</td><td>75</td><td>147</td></tr>
<tr><td>Total</td><td>97</td><td>90</td><td>113</td><td>300</td></tr>
</table></td>
<td>3</td>
<td>Award 1 marks for correctly placing all given data
<table>
<tr><th></th><th>London</th><th>Manchester</th><th>York</th><th>Total</th></tr>
<tr><td>Year 7</td><td>65</td><td></td><td></td><td></td></tr>
<tr><td>Year 8</td><td>32</td><td>40</td><td></td><td>147</td></tr>
<tr><td>Total</td><td></td><td>90</td><td></td><td>300</td></tr>
</table>
Award 2 marks for correctly placing all given data and working out at least two other values correctly</td>
</tr>
<tr>
<td>12</td>
<td>52.5 m^2</td>
<td>3</td>
<td>Accept 525 000 cm^2

Award 1 mark for correct method
Award 1 mark for correct answer
Award 1 mark for correct units</td>
</tr>
<tr>
<td rowspan="2">13</td>
<td>$\frac{1}{4}$</td>
<td>1</td>
<td>Accept any correct equivalent e.g. $\frac{2}{8}$, 25%, 0.25</td>
</tr>
<tr>
<td>$\frac{1}{4}$</td>
<td>1</td>
<td>Accept any correct equivalent e.g. $\frac{2}{8}$, 25%, 0.25</td>
</tr>
</table>

Year 8 Autumn Higher Paper Mark Scheme

Question	Answer	Marks	Notes and guidance
1	10	2	Award 1 mark for finding 15 ÷ 3
2	No, with supporting statement e.g. circumference of the cake is $20 \times \pi > 60$	2	No marks awarded for No circled with no working. Allow any reasonable explanation. Award 1 mark for attempt to multiply diameter by π or radius by 2π seen
3	Positive	1	
	e.g. "Some visitors may have spent more than £1 whilst others may have spent nothing at all"	1	Any reasonable explanation
4		1	Award 1 mark for two correct values
	Straight line drawn from (−2, 9) to (3, 1)	2	Award 1 mark for at least four or their values correctly plotted
5	19	2	Award 1 mark fully correct method e.g. attempt to find 200 ÷ 8 and 480 ÷ their "25"
6	Completes the table with 12 for yellow and 6 for blue	2	Allow if yellow = 12 and blue = 6 seen elsewhere. Award 1 mark for clear attempt to share "60 – (27 + 15)" in the ratio 2 : 1
	$\frac{9}{20}$	1	Accept 0.45, 45%, $\frac{27}{60}$ or any equivalent fraction

Year 8 Autumn Higher Paper Mark Scheme

7	35	1	
	27%	2	Award 1 mark for $\frac{54}{200}$ or equivalent, or complete correct method with computational error in the total
8	10 : 3	2	Award 1 mark for 30 : 9 or 2.5 : 0.75
	1 : 0.75	2	Allow 1 : $\frac{3}{4}$ or equivalent fraction Award 1 mark for attempt to simplify 12 : 9
9	Indicates $y = \frac{1}{x}, y = x^2$ and $y = -x^2$	2	Accept any clear indication – circled, underlined, ticked etc. Award 1 mark for two correct equations indicated and no extras
10	616	2	Award 1 mark for 28×22
	30	2	Allow 1 mark for attempting $900 \div 30$
11	320	2	Award 1 mark for correct method to find number of bricks for 1 m and multiply by or 9 (e.g. 720 seen)
12	10	2	Award 1 mark for attempt to evaluate $4 \div \frac{2}{5}$ or equivalent calculation
13	37.7 cm	2	Award 1 mark for attempt at $7540 \div 200$ or $75.4 \div 200 \times 100$ or equivalent
14	$\frac{4}{3}$	1	Accept any equivalent form e.g. $1.\dot{3}$ or $1\frac{1}{3}$

Year 8 Autumn Higher Paper Mark Scheme

15	60	2	Award 1 mark for attempt at $\frac{3}{8} \times 160$ or equivalent
	$\frac{5}{24}$	1	
16	$(7, -6)$	2	Award 1 mark for either 7 or -6 correct

Year 8 Spring Higher Paper

Question	Answer	Marks	Notes and guidance
1	Selects all three pairs correctly i.e. $3(a-4)$ and $3a-12$ $a \times a \times a$ and a^3 $8+a$ and $a+8$	2	Award 1 mark for two correct pairs
2	2	1	
	Chooses $y=\frac{1}{2}x$ and $y=12-x$ only	1	Accept any clear indication – circled, underlined, ticked etc.
3	Completes table correctly: • 7 in final column • 10 dots drawn in correct pattern on third row	1	Award 1 mark for 2 boxes correctly ticked and no other errors
	$3n+1$	2	Award 1 mark for any expression involving $3n$
	States yes and shows $1 \times 5 = 5$ $5 \times 5 = 25$ $25 \times 5 = 125$ $125 \times 5 = 625$	1	
4	9	2	Award 1 mark for at least one of $4^0 = 1$ or $64^{\frac{1}{2}} = 8$ seen
	4^{30}	1	

Year 8 Spring Higher Paper

5	$\frac{24}{15}$ or equivalent e.g. $\frac{8}{5}$, 1.6 etc.	1	
	64	2	Award 1 mark for correct method e.g. $40 \div 5 \times 8$ or equivalent
6	> =	2	Award 1 mark for each correct symbol
	4×10^{-2}	2	Award 1 mark for 0.04 seen
7	Rounds 38.1cm to 40 cm (or equivalent) and multiplies by 3 120 cm or 1.2 m	1 1	No marks for just the answer
	100	1	
8	> < <	3	Award 1 mark for each correct answer
9	$12a^3$	1	
	$3a$	1	
10	180	3	Award 1 mark for 60% = 108 seen or implied Award 1 mark for correct method to find total from their percentage =108

11	Obtains a^2, $7a$ and 35	2	Award 1 mark for any two correct answers – do not accept $a7$ for $7a$
	$a^2 + 12a + 35$	1	Allow terms in any order Follow through from first part provided answer includes a^2, a term in a and a constant
12	£40 000	2	Award 1 mark for correct method
13	$8a$	1	
	$3a + 3$ or $3(a + 1)$	1	
	$a > \frac{3}{5}$	2	Award 1 mark for forming correct inequality and at least 1 correct step towards solution e.g.
14	$4.65 \leq x < 4.75$	2	Award 1 mark for each value

Year 8 Spring Higher Paper Mark Scheme

Question	Answer	Marks	Notes and guidance
1	70	2	Award 1 mark for $21 \div 3$ or $10\% = 7$ seen or implied e.g. on a bar model
2	6	2	Award 1 mark for attempt to convert $\frac{120}{2000}$ into a percentage
3	Indicates $y = 7x$	1	Accept any clear indication – circled, underlined, ticked etc.
	e.g. "No because $x = 4y$ has a gradient of $\frac{1}{4}$"	1	Accept any reasonable explanation Do not award 'No' without explanation
4	30	1	
5	300	2	Award 1 mark for $54\,000 \div 180$
6	$6n + 4$	2	Award 1 mark for $6n + k$ or $6n - k$
7	$x^2 + 15x + 56$	2	Award 1 mark for any three terms from x^2, $7x$, $8x$ and 56 seen
	$8x^9$	2	Award 1 mark for any multiple of x^9
8	-6.5	3	Award 1 mark for $6x + 15$ seen Award 2nd mark for correct method to solve equation with unknowns on both sides Accept any equivalent answer
9	1 : 50	2	Award 1 mark converting both numbers to grams or kilograms

Year 8 Spring Higher Paper Mark Scheme

10	403	3	Award 1 mark for forming $3n - 5 = 400$ or $3n - 5 > 400$ Award 2nd mark for correct method to solve equation/inequality e.g. 135 or 136 seen No marks for trial and improvement unless 403 correctly given as final answer
11	36	2	Award 1 mark for $4\frac{1}{2} \div \frac{1}{8}$ or equivalent seen
12	2×10^{-2}, 2^{-2}, 2^{2}, 2×10^{2}	2	Award 1 mark for correct conversion of at least two numbers to allow comparison
13	e.g. "Y Box as £360 > £300"	3	Award 1 mark for any correct method to work out price of either item Award 2nd mark for both normal prices evaluated correctly (Game Station £300, Y Box £360) Award final mark for correct choice and fully justified reasoning No marks 'Y Box' no supporting working.
14	10 blue counters	2	Award 1 mark for $\frac{2}{5}$ of the total equated to 12 seen or implied
15	400	2	Award 1 mark for 1 mark for any fully correct method e.g. calculating the areas and dividing or 20×20 seen or implied.
16	$(-2, -7)$	2	Award 1 mark for either value correct or clear attempt to find the mean of both x-values and y-values

17	$19.5 \leq l < 20.5$	2	Award 1 mark for 19.5 and 20.5 seem with incorrect inequalities or no inequalities
18	5×10^{11}	2	Award 1 mark for correct answer in any other from e.g. 500 000 000 000 or 0.5×10^{12}

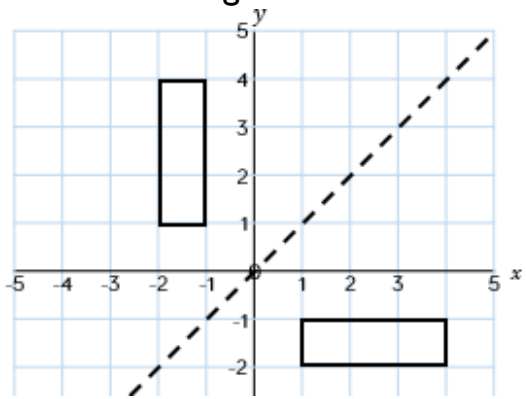
Year 8 Summer Higher Mark Scheme

Question	Answer	Marks	Notes and guidance
1	37	1	
	States no and justifies answer e.g. • $3n + 7 = 38$ does not have an integer answer • Shows sequence contains 76 and 79 and so cannot contain 78	2	Award 1 mark for correct method
2	20%	2	Award 1 mark for attempt to convert $\frac{4}{20}$ into a percentage
3	e.g. Whitney sends more texts on average, but the number of texts sent by Huan does not vary as much	2	Award 1 mark for a comment about the mean and 1 for a comment about the range.
4	$x = 34.5°$	2	Award 1 mark for equating $2x - 4$ and 65 and attempting to solve
	$x > 3\frac{1}{2}$ or equivalent	3	Award 1 mark for correct expansion of brackets Award 2nd mark for first correct step to solve resulting inequality
5	e.g. "It makes the increase look very large when it's only a very small percentage change"	1	Any sensible explanation
6	500 m	2	Must include "m" Award 1 mark for attempt to find the perimeter and multiply by 20

Year 8 Summer Higher Mark Scheme

7	Correct perpendicular bisector drawn	2	Award 1 mark for appropriate arcs
8	Correct pie chart drawn, with labels	3	Award 1 mark for correct angles found (162°, 114°, 84°) Award 2nd mark for accurate diagram
	$\frac{9}{20}$ or equivalent	1	e.g. 45%, 0.45 or any equivalent fraction including $\frac{54}{120}$ or $\frac{162}{360}$
	72	2	Award 1 mark for correct method to find the total number of students (180)
9	$40 + \frac{9\pi}{2}$	3	Allow $40 + 4.5\pi$ or any exact equivalent form Award 1 mark for area of trapezium found to be 40 Award 1 mark for substituting $r = 3$ into $A = \pi r^2$ and attempting to halve their answer

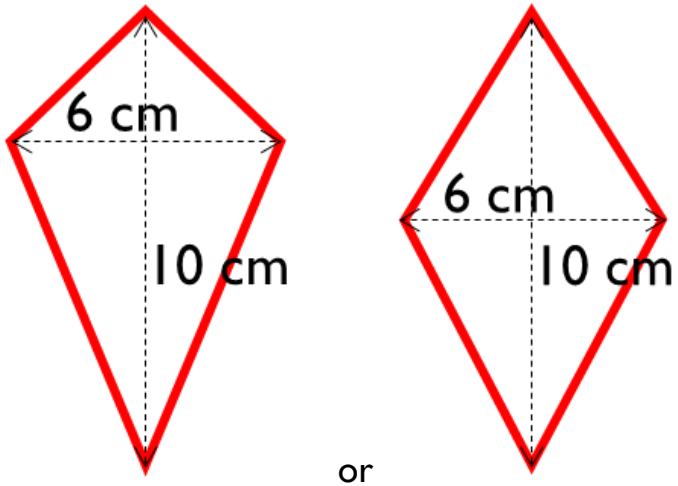
Year 8 Summer Higher Mark Scheme

10	$y = x$	1	
	Correct rectangle drawn i.e.  	2	Award 1 mark for 3 out of 4 points correct or rectangle in correct orientation but in wrong position
11	8 (with workings)	3	No marks for 8 without justification. Award 1 mark for sharing 180 in the ratio 3 : 1 Award 2nd mark for correct method to find number of sides e.g. $\frac{360}{\text{their "45"}}$
12	1.3	3	Award 1 mark for correct final column Award 2nd mark for dividing their total (from correct method) by 20
13	$0, 8 \times 10^{-3}, 2^{-3}, 4^{\frac{1}{2}}, 5 \times 10^{3}$ or $0, 0.008, \frac{1}{8}, 2, 5000$	2	Accept the numbers written in any form Award 1 mark for one misplaced value or correct method to work out at least three of the first four expressions

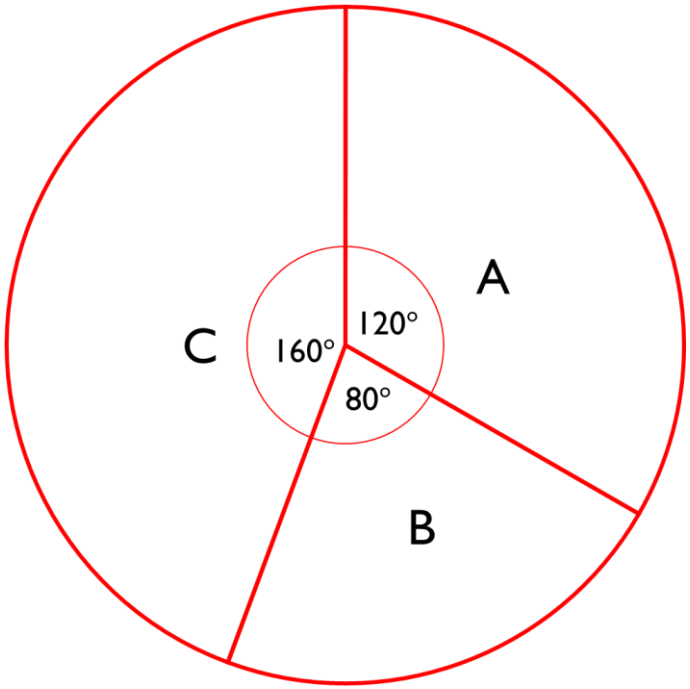
14	123 found with full method e.g. $3x - 6 = 99 - 2x$ (corresponding angles are equal) Leading to $x = 21$ $99 - 2x = 57$ Base angles in an isosceles triangle are equal, so $57 + y = 180$ (angles on a straight line add up to 180°)	3	Award 2 marks if 123 found but method or reasons incomplete Award 1 mark for $x = 21°$ correctly found Award 1 mark for using base angles in an isosceles triangle are equal and angles on a straight line add up to 180° with their value of $99 - 2x$ to find y

Year 8 Summer Higher Paper Mark Scheme

Question	Answer	Marks	Notes and guidance
1	0.25 : 1	1	Accept $\frac{1}{4}$: 1
2	£16	2	Award 1 mark for a correct method to obtain original price e.g. 75% = £12 and attempt to find 100%
3	e.g. "Most people in her sample do this but it may not represent the entire population"	1	Accept any explanation that refers to the sample being interpreted as the population e.g. "She has only asked her friends"
	e.g. "The exact reading times of her friends are unknown"	1	Accept any reasonable explanation
	4.8 hours	3	Award 1 mark for attempt to find frequency × midpoint for at least two groups Award 2nd mark for attempt to divide their total for all three groups by 20
4	20 cm	2	Award 1 mark for finding 1 cm represents 50 m
5	$x = 0.5$	3	Accept $x = \frac{1}{2}$ Award 1 mark for correct first step to isolate the unknown e.g. $5 = 4 + 2x$ or $3x + 1 = 5x$ Award 2nd mark for correct second step e.g. $1 = 2x$
	$a = 10$	1	

	e.g. "There are 3 outcomes on one spinner and four on the other so it's 3×4"	1	Accept any reasonable explanation referring to product rule for counting Do not accept explanations using the table of outcomes.
	$\frac{1}{6}$ or equivalent	1	Accept any equivalent fractions, decimals or percentages
	$\frac{1}{4}$ or equivalent	1	
7	e.g.  or 	2	Award 1 mark attempt to draw a quadrilateral where one of the diagonals has been bisected at right angles but lengths are incorrect OR for drawing a rhombus (i.e. both diagonals bisected at right angles)
8	e.g. "A reflection in the line $y = -1$"	1	Do not accept line drawn on diagram without a description. Accept rearrangements e.g. $x = y$.
	e.g. "A reflection in the line $y = x$"	1	

Year 8 Summer Higher Paper Mark Scheme

9	e.g.  	2	Award 1 mark for sector A = 120° Award 1 mark for correctly calculating sectors B and C. Follow through 1 mark for correct pie chart with angles adding up to 360° accurately drawn and clearly labelled. Angles do not need to be labelled.
10	30 m	3	Award 1 mark for forming an equation using the area of trapezium e.g. $3000 = \frac{1}{2} \times (120 + 80) \times PS$ Award 2nd mark for correct method to solve their equation (must involve $\frac{1}{2}$)
11	9	1	
12	$11n - 3$	2	Accept $-3 + 11n$ Award 1 mark for finding $11n +$ "k"
13	a^9	1	Accept any clear indication

Year 8 Summer Higher Paper Mark Scheme

<table>
<tr><td rowspan="2">14</td><td>$\frac{1}{9}$</td><td>1</td><td></td></tr>
<tr><td>$\frac{1}{2}$</td><td>1</td><td></td></tr>
<tr><td rowspan="2">15</td><td>e.g. “1 cm = 100 cm so 1 $m^2 = 100 \times 100$ cm^2”</td><td>1</td><td>Accept any correct reasoning e.g. “It should be 10 000”</td></tr>
<tr><td>1000</td><td>1</td><td></td></tr>
<tr><td>16</td><td>$19\frac{1}{5}$ or 19.2</td><td>2</td><td>Award 1 mark for a correct method seen e.g.
$6\frac{2}{3} \times 3$ oe
Accept any equivalent answer, but do not accept an improper fraction</td></tr>
<tr><td rowspan="2">17</td><td><table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>1.5</td><td>0.75</td><td>0.5</td><td>0.375</td></tr></table></td><td>2</td><td>Award 1 mark for any two values correct.
Accept values as fractions or decimals</td></tr>
<tr><td>e.g. “No because as x increases by 1unit, y does not have equal increments”</td><td>1</td><td>Accept any correct reasonable explanation.
Do not accept “No” without a valid reason.</td></tr>
</table>