

Mark Scheme

Q1.

Paper_5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		Point plotted	1	B1 for point plotted at (6,35)
(b)			1	B1 for description of dynamic relationship or negative correlation
(c)			1	B1 for single straight line of best fit which could be used to take readings
(d)		21 - 26	1	B1 for answer in the range 21 - 26 or ft from single straight line segment (if previous B0)

Q2.

PAPER: 5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		The greater the hand = length the greater the foot length	1	B1 for the greater the hand = length the greater the foot length oe (accept positive correlation)
(b)		24 – 25	2	M1 for a single straight line segment with positive gradient that could be used as a line of best fit or an indication on the diagram from 18.5 on the x-axis A1 for answer in range 24 – 25

Q3.

	Working	Answer	Mark	Notes
	0 5 5 8 2 4 5 7 9 2 5 8 4 6 2 5	Ordered stem and leaf diagram	3	M1 for an unordered stem and leaf diagram with no errors or omissions OR an ordered stem and leaf diagram condoning two errors or omissions A1 for a correctly ordered stem and leaf diagram B1 for an appropriate key

Q4.

Paper 5MB1H_01				
Question	Working	Answer	Mark	Notes
		12 3 5 9	3	B2 for a fully correct ordered diagram (B1 for correct unordered diagram or ordered with at most two errors) B1 for correct key eg 12 3 means 123 (cm)
		13 0 3 3 5 7 8		
		14 7 7 8 9		
		15 0 1		

Q5.

5MB1H_01 November 2015					
Question	Working	Answer	Mark	Notes	
(a)		0.2	2	M1 for $1 - (0.15 + 0.41 + 0.24)$ A1 cao	
(b)		12	2	M1 for 50×0.24 oe A1 cao	

Q6.

Working					Answer	Mark	Notes
	B	G	Tot		29	4	M1 for a complete correct method to find the total number of girls eg $120 - 30 (=90)$ M1 for complete correct method to find the number of girls who play football or hockey eg $26 + 35 (=61)$ M1 for '90' – '61' A1 for identifying 29 as the answer OR M1 for a complete correct method to find the total number playing tennis M1 for a complete correct method to find the number of boys playing tennis M1 for 'total for tennis'-'boys playing tennis' A1 for identifying 29 as the answer
F	10	35	45				
H	12	26	38				
T	8	29	37				
Tot	30	90	120				
	F	H	T	Tot			
B	10	12	8	30			
G	35	26	29	90			
Tot	45	38	37	120			

Q7.

5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		Reasons	2	1 st aspect: no time frame 2 nd aspect: overlapping boxes 3 rd aspect: not exhaustive ie no <1, no "other", no >20 B2 for two aspects (B1 for one aspect)
(b)		Question and responses	2	1 st aspect: question including time frame (or question and time frame in response boxes) 2 nd aspect: at least 3 non overlapping response boxes, with discrete values or a range; need not be inclusive of all OR a set of at least 3 boxes which are exhaustive (but which may overlap) B2 for two different aspects (B1 for one aspect)

Q8.

Question	Working	Answer	Mark	Notes
(a)		Overlapping response boxes Leading/biased question Age too personal Missing units	2	B2 for any two of: overlapping response boxes, too personal to ask person's age, a leading or biased question, no units (B1 – just one of the above).
(b)		How many pieces of fruit do you eat each day? 0 to 2, 3 to 4, over 4	2	B1 for a sensible question including a time period B1 for at least 3 response boxes. Any pairs of response boxes must not overlap
(c)	$\begin{array}{r} 73 \\ \hline 536 + 384 + 48 + 73 \\ \times 100 \end{array}$	7	2	M1 for $\frac{73}{536+384+48+73} \times 100$ Or $100 \div \left(\frac{536+384+48+73}{73} \right)$ Or 7.01... A1 for 7

Q9.

Question	Working	Answer	Mark	Notes																													
	<table><tr><td></td><td>B</td><td>C</td><td>S</td><td></td></tr><tr><td>B</td><td></td><td></td><td>15</td><td></td></tr><tr><td>G</td><td>28</td><td>20</td><td></td><td>66</td></tr><tr><td></td><td></td><td>36</td><td></td><td>120</td></tr></table> <div><div><div>B</div><div>C</div><div>S</div></div><div><table><tr><td></td><td></td><td>28</td></tr><tr><td></td><td></td><td>20</td></tr><tr><td>15</td><td></td><td></td></tr></table></div><div>36</div></div> <div>66</div>		B	C	S		B			15		G	28	20		66			36		120			28			20	15			51	4	<p>M1 for a two-way table or Venn diagram with bowling, cinema, skating, boys and girls labelled or list of at least two combinations clearly labelled.</p> <p>M1 for attempt to find the value of an unknown entry in the table oe eg $66 - 28 - 20$, $120 - 66$, $36 - 20$</p> <p>A1 for 16 or 18 or 54 or 23 or 33</p> <p>A1 cao</p> <p>(Note: $36 + 15 = 51$ scores no marks)</p>
	B	C	S																														
B			15																														
G	28	20		66																													
		36		120																													
		28																															
		20																															
15																																	

Q10.

Question	Working	Answer	Mark	Notes																				
(i)	<table border="1"> <tr> <td></td><td>Y 4</td><td>Y 5</td><td>Y 6</td><td>To t</td></tr> <tr> <td>S</td><td></td><td>21</td><td>18</td><td></td></tr> <tr> <td>N S</td><td>11</td><td></td><td></td><td>37</td></tr> <tr> <td>To t</td><td></td><td></td><td>30</td><td>96</td></tr> </table> <p>OR $96 - 37 = 59$ children can swim $18 + 21 = 39$ children in Y5 or Y6 can swim $59 - 39$</p>		Y 4	Y 5	Y 6	To t	S		21	18		N S	11			37	To t			30	96	20	4	<p>M1 for including 4 of the 6 pieces of information given in a clearly labeled two-way table A1 for 20 or 20 out of 96 or 20/96</p> <p>OR M1 for a correct method that leads to the number of children in year 4 that can swim eg $96 - 37 (= 59)$ children can swim $18 + 21 = (39)$ children in Y5 or Y6 can swim '$59 - 39$' A1 for 20 or 20 out of 96 or 20/96</p>
	Y 4	Y 5	Y 6	To t																				
S		21	18																					
N S	11			37																				
To t			30	96																				
(ii)	<table border="1"> <tr> <td></td><td>Y 4</td><td>Y 5</td><td>Y 6</td><td>To t</td></tr> <tr> <td>S</td><td>20</td><td>21</td><td>18</td><td>59</td></tr> <tr> <td>N S</td><td>11</td><td>14</td><td>12</td><td>37</td></tr> <tr> <td>To t</td><td>31</td><td>35</td><td>30</td><td>96</td></tr> </table> <p>OR $20 + 11 = 31$ children in Y4 $30 + 31 = 61$ children in Y4 or Y6 $96 - 61$</p>		Y 4	Y 5	Y 6	To t	S	20	21	18	59	N S	11	14	12	37	To t	31	35	30	96	35		<p>M1 for one correct calculation leading to a 'new', piece of information in a clearly labeled two-way table A1 for 35 or 35 out of 96 or $\frac{35}{96}$</p> <p>OR M1 for a correct method that leads to the total number of children in year 5 eg '$20 + 11 (= 31)$ children in Y4 $30 + '31' (= 61)$ children in Y4 or Y6 $96 - '61'$ children in Y5 A1 for 35 or 35 out of 96 or $\frac{35}{96}$</p> <p>SC If M1 not earned then award B1 if ans(ii) = 55 – ans (i)</p>
	Y 4	Y 5	Y 6	To t																				
S	20	21	18	59																				
N S	11	14	12	37																				
To t	31	35	30	96																				

Q11.

	Working	Answer	Mark	Notes
	$342 \div 88 = 3.886\dots$ $570 \div 195 = 2.923\dots$ $1500 \div 399 = 3.759\dots$ OR $88 \div 342 = 0.257\dots$ $195 \div 570 = 0.342\dots$ $399 \div 1500 = 0.266$	Small bottle with correct calculations	4	M1 for one of $342 \div 88 (= 3.886\dots)$, $570 \div 195 (= 2.923\dots)$, $1500 \div 399 (= 3.759\dots)$ OR one of $88 \div 342 (= 0.257\dots)$, $195 \div 570 (= 0.342\dots)$, $399 \div 1500 (= 0.266)$ OR any other calculation that could lead to a comparative figure M1 for calculations that could lead to comparative figures for 2 bottles M1 for calculations that could lead to comparative figures for 3 bottles, e.g. all three from the above lists C1 for correct comparative figures for all 3 bottles leading to a correctly stated comparison: small or 342g best value

Q12.

PAPER: 5MB3H 01				
Question	Working	Answer	Mark	Notes
*	$179 \div 70 = 2.5(571\dots)$ $275 \div 100 = 2.7(5)$ $399 \div 150 = 2.6(66\dots)$ $70 \div 179 = 0.39(11\dots)$ $100 \div 275 = 0.36(36\dots)$ $150 \div 399 = 0.37(59\dots)$	70 ml/ tube with reason	4	Using pence per ml/ M1 for a correct method of finding the cost per millilitre (or cost/10 ml/ etc) for one of the sizes M1 for a correct method of finding the cost per millilitre (or cost/10 ml/ etc. must be consistent) for each of the sizes A1 for 2.5(571\dots) (70 ml) and 2.7(5) (100 ml) and 2.6(66\dots) (150 ml) or equivalent depending upon units used. These values can be rounded or truncated as long as they remain different C1 (dep on M1) for selecting the tube with the best value for money based upon a comparison of their 3 values. OR Using ml/ per 1p M1 for a correct method of finding the volume per pence (or £) for one of the sizes M1 for a correct method of finding the volume per pence (or £) for each of the sizes, with consistent units A1 for 0.39(11\dots) (70 ml) and 0.36(36\dots) (100 ml) and 0.37(59\dots) (150 ml) or equivalent depending upon units used. These values can be rounded or truncated as long as they remain different C1 (dep on M1) for selecting the tube with the best value for money based upon a comparison of their 3 values.

Q13.

5MB3H/01 June 2015				
Question	Working	Answer	Mark	Notes
		28	3	M1 for 240×1.2 (=288) M1 for "288" $\div 10$ (=28.8) A1 cao OR M1 for $10 \div 1.2$ (=8.33) M1 $240 \div$ "8.33" (=28.8) A1 cao

Q14.

PAPER: 5MB3H_01				
Question	Working	Answer	Mark	Notes
*		Medium	4	M1 for $52 \div 23$ (=2.26...) or $170 \div 72$ (=2.36...) or $960 \div 416$ (=2.30...) or $23 \div 52$ (=0.44...) or $72 \div 170$ (=0.42...) or $416 \div 960$ (=0.43...) M1 for $52 \div 23$ (=2.26...) and $170 \div 72$ (=2.36...) and $960 \div 416$ (=2.3...) OR $23 \div 52$ (=0.44...) and $72 \div 170$ (=0.42...) and $416 \div 960$ (=0.43...) A1 for 2.26... and 2.36... and 2.3... OR 0.44... and 0.42... and 0.43... C1 (dep on M1) for conclusion ft from three comparable figures [could use different figures relating to the three boxes]

Q15.

		Working	Answer	Mark	Notes
			600, 150, 75, 375	3	M2 a complete correct method seen to calculate the required ingredients (M1 for a method to find a scale factor or the weight of one scone or dividing ALL by the same number or multiplying by 30) A1 cao SC B2 for three out of four ingredients correct

Q16.

		Working	Answer	Mark	Notes
			13	2	M1 for $7.8(0) \div 6 \times 10$ or $7.8(0) \div 6$ or $7.8(0) \times 10$ or $\frac{10}{6}$ oe or $\frac{6}{10}$ oe A1 cao

Q17.

PAPER: 5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		120	2	M1 for $\frac{2}{3} \times 180$ oe A1 cao
(b)		75	2	M1 for $1000 \div 400 \times 30$ or $30 + 30 + 15$ oe A1 cao OR M1 for $3 \times 25 : 40 \times 25$ oe or $75 : 1000$ A1 cao

Q18.

PAPER: 5MB2H_01				
Question	Working	Answer	Mark	Notes
	$\frac{90 \times 0.5}{5} = \frac{45}{5}$	8.9 – 9.5	2	M1 for at least two of 90, 0.5 and 5 A1 for 8.9 – 9.5

Q19.

PAPER: 1MA0/1H				
Question	Working	Answer	Mark	Notes
*		95° with reasons	4	<p>M1 for angle $DBC = 180 - 125 (= 55)$ or angle $EAC = 180 - 125 (=55)$ (May be on diagram) A1 for $x = 95$ C2 (dep on M1) with full reasons for their given method, e.g. <u>angles</u> on a straight line add up to <u>180°</u> and <u>angles</u> in a <u>triangle</u> add up to <u>180°</u> and <u>corresponding angles</u> are equal or <u>allied angles</u> / <u>co-interior angles</u> add up to <u>180°</u> and <u>angles</u> in a <u>triangle</u> add up to <u>180°</u> (C1 (dep on M1) for one appropriate reason linked to parallel lines)</p> <p>M1 for angle $CDB = 125 - 30 (= 95)$ (May be on diagram) A1 for $x = 95$ C2 (dep on M1) for full reasons, for their given method, e.g. <u>exterior angles</u> are equal to the sum of the <u>interior opposite angles</u> and <u>corresponding angles</u> are equal (C1 (dep on M1) for one of these appropriate reasons linked to parallel lines)</p>

Q20.

5MB2H 01 November 2015				
Question	Working	Answer	Mark	Notes
		7.21 (am)	3	<p>M1 for listing multiples 9,18,27,36 and 12,24,36 (condone 1 arithmetic error) or method to find LCM M1 for identifying 36 as LCM A1 cao</p> <p>OR</p> <p>M1 for listing times 6.54, 7.03, 7.12, 7.21 or for listing times 6.57, 7.09, 7.21 (condone one arithmetic error) M1 for listing times 6.54, 7.03, 7.12, 7.21 and 6.57, 7.09, 7.21 (condone one arithmetic error) A1 cao</p>

Q21.

PAPER: 1MA0_1H				
Question	Working	Answer	Mark	Notes
(a)		$2 \times 2 \times 3 \times 3 \times 5$	3	M1 for a continual prime factorisation (at least two consecutive steps correct) or at least two stages of a factor tree correct M1 for a fully correct factor tree or list 2,2,3,3,5 A1 for $2 \times 2 \times 3 \times 3 \times 5$ or $2^2 \times 3^2 \times 5$
(b)		Eg 6, 30	2	M1 for two numbers with an HCF of 6 or for two numbers with a LCM a multiple of 15 A1 for two numbers with an HCF of 6 and a LCM a multiple of 15 (eg (6, 30), (12, 30), ...) OR M1 for 2×3 and 3×5 or for $2 \times 3 \times 5$ A1 for two numbers with an HCF of 6 and a LCM a multiple of 15 eg (6, 30) (12, 30) ...

Q22.

Question	Working	Answer	Mark	Notes
		230	2	M1 for $180 + 50$ A1 cao OR M1 for $360 - (180 - 50)$ or $360 - 130$ A1 cao OR M1 for $50 + (90 - 50) + 90 + 50$ or $50 + 40 + 90 + 50$ A1 cao OR M1 for a suitable diagram (sketch) with bearing of lighthouse from ship indicated and 50° marked at lighthouse; diagram only intended to indicate position of 50° ; ignore other labels and markings unless they create ambiguity. A1 cao

Q23.

Question		Working	Answer	Mark	Notes
	(a)		150	2	M1 for $180 - (360 - 330)$ or $180 - 30$ or $330 - 180$ or a complete diagram showing the bearing of 330° A1 cao
	(b)		11 40	4	M1 for $200 \div 120 (=1 \frac{2}{3} \text{ h})$ M1 for conversion between hours and minutes A1 for 1 h 40 min or 100 minutes B1 (ft dep on M1) for 11 40

Q24.

Question		Working	Answer	Mark	Notes
			Correct line drawn	2	M1 for two pairs of relevant arcs drawn A1 correct line drawn (with arcs) SC B1 Correct line no arcs visible


Q25.

		Working	Answer	Mark	Notes
*			4 rolls	4	M1 for $\pi \times 2.4$ M1 for $(\pi \times 2.4) \div 2$ or 7.5 to 7.541 M1 for or 3.75 or 3.76... or 3.77... or (2, 4,) 6, 8 C1 for a clear statement that 4 (rolls) are needed

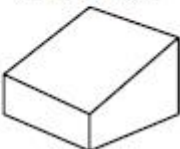
Q26.

PAPER: IMA0_2H					
Question		Working	Answer	Mark	Notes
			Translation $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$	2	B1 for translation B1 for $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$ NB No marks if more than one transformation given.

Q27.

5MB2H November 2016					
Question	Working	Answer	Mark	Notes	Type
		Plan 	2	M1 for 7×4 rectangle A1 for correct plan with dividing line	G

Q28.

Question	Working	Answer	Mark	Notes
(a)		6 by 4 rectangle drawn	2	B2 for a 6 by 4 rectangle drawn (B1 for a rectangle drawn with one correct dimension)
(b)		3-D sketch 	2	M1 for an attempt at a 3-D sketch with a trapezoidal face A1 for a correct 3-D sketch

Q29.

Question	Working	Answer	Mark	Notes
(a)		5	1	B1 cao
(b)		7	1	B1 cao

Q30.

	Working	Answer	Mark	Notes
(a)		$\frac{15}{100}$	5	M1 for fraction with 15 as the numerator or 100 as the denominator A1 for $\frac{15}{100}$ oe or 0.15 or 15%
(b)		0	1	B1 oe Accept $\frac{0}{100}$, 0%, 0 out of 100 but not 0:100
(c)		$\frac{1}{10}$		M1 for $100 - (50 + 25 + 15)$ A1 oe

Q31.

Question	Working	Answer	Mark	Notes
		0.06 or 6%	2	M1 for $1 - (0.09 + 0.18 + 0.16 + 0.21 + 0.30)$ oe OR M1 for $100 - (9 + 18 + 16 + 21 + 30)$ oe OR M1 for $1 - (\frac{9}{100} + \frac{18}{100} + \frac{16}{100} + \frac{21}{100} + \frac{30}{100})$ A1 for 0.06 or 6% (6 only gets A0) or $\frac{6}{100}$ oe [SC; B1 for 6 on the answer line without working, if M0 scored]

Q32.

Question	Working	Answer	Mark	Notes
(a)		32, 12, 88.92	3	B1 for 32 B1 for 12 B1 ft "32" for 88.92
(b)		509.98	3	M1 for a correct step $452.25 + 120 (= 572.25)$ or $452.25 + 2.56 (= 454.81)$ or $452.25 - 64.83 (= 387.42)$ or $120 + 2.56 (= 122.56)$ or $120 - 64.83 (= 55.17)$ or $64.83 - 2.56 (= 62.27)$ M1 for a complete method A1 cao

Q33.

	Working	Answer	Mark	Notes
(a)		$\frac{1}{10}$	1	B1 for $\frac{1}{10}$ or equivalent fraction
(b)		0.25	1	B1 for 0.25

Q34.

5MB3F_01 November 2015					
Question		Working	Answer	Mark	Notes
	(a)		300	1	B1 cao
	(b)		4	1	B1 cao
	(c)		0.7	1	B1 cao

Q35.

		Working	Answer	Mark	Notes
		$2x$ $x+3$ $x+2x+x+3$	$x+2x+x+3$	2	M1 $2x$ or $x+3$ A1 $x+2x+x+3$ oe

Q36.

5MB1F/01 June 2015					
Question		Working	Answer	Mark	Notes
	(a)		$1 - x$	1	B1 cao
	(b)		$200(1 - x)$	2	M1 for $200 \times "(1 - x)"$ A1 ft e.g. $200(1 - x)$ or $200 - 200x$

Q37.

PAPER: 5MB1F 01					
Question		Working	Answer	Mark	Notes
*	(a)		diagram or chart	4	B1 for a key or suitable labels to identify Harry and Shamus B1 for horizontal or vertical axis labelled B1 for at least 3 correct plots C1 for fully correct diagram(s) or charts(s)
	(b)		comparisons	2	B1, B1 ft for any two correct comparisons.

Q38.

PAPER: 5MB3F_01					
Question	Working	Answer	Mark	Notes	
(a)		Graph drawn	2	B2	for correct straight line from (0,0) to (10,25) (B1 for at least 3 points plotted correctly or a line through at least 3 of the points from the table)
*(b)		Kate with comparison	3	M1 A1 C1 (dep M1)	for an attempt to convert 62 inches to cm (eg $15 \times 10 + 5$) or convert 150 cm into inches (eg 10×6) for 60 (inches) or 155 (cm) for Kate with comparison eg '62' > 60 or '155' > 150 ft from a straight line segment

Q39.

	Working	Answer	Mark	Notes
		6.87	4	M1 for $\pi \times 4 \times 4$ or $\pi \times 4^2$ or $\pi \times 16$ or $\pi r^2 = 50.26...$ M1 for ' πr^2 ' $\div 2$ M1 for $8 \times 4 - '\pi r^2 \div 2'$ A1 for 6.86 – 6.88

Q40.

Question	Working	Answer	Mark	Notes
	$\pi \times 20$	62.8 cm	3	M1 $\pi \times 20$ or $\pi \times 19.5$ or $\pi \times 19.95$ A1 62.8 – 63 B1(indep) for units consistent with answer

Q41.

Question	Working	Answer	Mark	Notes
(a)(i)		2.23	4	B1 cao
(ii)	$2.19+3 \times 2.23+2.26+2.28+2 \times 2.29+2.31+2.33$ $22.64 \div 10$	2.264		M1 for summing heights and dividing by 10 A1 for 2.26(4)
(iii)		0.14		B1 accept – 0.14
(b)		mean for men is greater and range for women is greater	2	B1 ft for comparison of means B1 ft for comparison of ranges

Q42.

5MB3F_01 November 2015					
Question		Working	Answer	Mark	Notes
	(a)		decagon	1	B1 cao
	(b)		1440	1	B1 cao

Q43.

5MB3F_01 November 2015					
Question		Working	Answer	Mark	Notes
			Correct tessellation	2	M1 for at least 5 correct shapes drawn A1 for 7 or more correct shapes drawn in a pattern that can be replicated

Q44.

Question		Working	Answer	Mark	Notes
		$(8 = 3 + 3 + 2 =) \text{£}9 +$ $\text{£}9 + 2 \times \text{£}3.75 = \text{£}25.50$ $\text{£}40 - \text{£}25.50 = \text{£}14.50$	14.50	3	M1 for $2 \times 9 + 2 \times 3.75$ oe or $18 + 7.5(0)$ or $25.5(0)$ seen M1 for $40 - "25.50"$ A1 cao (SC B1 for £10 or £13 or £12.25)

Q45.

Question		Working	Answer	Mark	Notes
*		$714 \times 2 = 1428$ $714 \times 0.95 = 678.30$ $678.30 \times 2 = 1356.60$ $1428 + 1356.60 = 2784.60$ $802 \times 2 = 1604$ $802 \times 0.85 = 681.70$ $681.70 \times 2 = 1363.40$ $1604 + 1363.40 = 2967.40$	Comparison	5	B1 for identifying 714 and 802 M1 for $\frac{95}{100} \times 714$ oe or $\frac{85}{100} \times 802$ oe M1 for $2 \times \text{'adult'} + 2 \times \text{'child'}$ oe for at least on e holiday A1 for 2784.6(0) and 2967.4(0) or 2785 and 2967 C1 for comparing the costs of their two holidays for 2 adults and 2 children and clearly indicating which is cheaper. Conclusion must clearly follow from working. QWC: Decision and justification should be clear with working clearly presented and attributable. (allow full marks for a candidate who has calculated the cost per day for each holiday (397.8(0) and 211.95(7..)) and compares these costs accordingly.)

Q46.

		Working	Answer	Mark	Notes
	(a)		6	1	B1 cao
	(b)		7	1	B1 cao
	(c)		2.6	2	M1 for clear intention to add 4 to both sides or clear intention to divide all terms by 5 A1 for $1\frac{3}{5}$ oe

Q47.

		Working	Answer	Mark	Notes
			41.968	2	B2 for 41.968 (B1 for $\frac{5246}{125}$ or 32.768 or 9.2)

Q48.

Question	Working	Answer	Mark	Notes
(a)		\times at $\frac{1}{2}$	1	B1 for \times marked at $\frac{1}{2}$ cao (allow the \times above or below the line)
(b)		\times at $\frac{1}{4}$	1	B1 for \times marked at $\frac{1}{4}$ (allow the \times above or below the line) [Tolerance: the \times must be between the 'l' in the word 'probability' above and the 'a' in the word 'scale' above]
(c)		\times at 0	1	B1 for \times marked at 0 cao (allow the \times above or below the line)

Q49.

Question	Working	Answer	Mark	Notes
(a)		$b - a$	1	B1 cao
(b)		$\frac{(a + b)}{2}$	1	B1 for $\frac{(a + b)}{2}$ oe

Q50.

	Working	Answer	Mark	Notes
(a)		$4d$	1	B1 oe
(b)		$4x + 12y$	2	B2 for $4x + 12y$ oe (B1 for $4x$ oe or $12y$ oe seen as part of an expression in terms of x and/or y)

Q51.

	Working	Answer	Mark	Notes
(a)		$5m + 10$	1	B1 cao
(b)		$y(y + 3)$	1	B1 cao
(c)		a^9	1	B1 cao

Q52.

Question		Working	Answer	Mark	Notes
			$4x + 9y$	2	B2for $4x + 9y$ (B1for $4x$ or $9y$ seen)

Q53.

Paper: 5MB2F_01					
Question		Working	Answer	Mark	Notes
	(a)		x^6	1	B1 cao
	(b)		y^2	1	B1 cao

Q54.

PAPER: 5MB3F_01					
Question		Working	Answer	Mark	Notes
			6 or - 6	3	M1 for $43 - 7 (=36)$ or $\sqrt{43}$ M1 for correct order of operations -7 then intention to square root A1 for 6 or -6 or both OR M1 for $x^2 - 7 = 43$ M1 for adding 7 to both sides A1 for 6 or -6 or both

Q55.

		Working	Answer	Mark	Notes
	(a)		44.89	1	B1 cao
	(b)		3.7	1	B1 accept -3.7 or ± 3.7

Q56.

Question		Working	Answer	Mark	Notes
	(a)		7000	1	B1 cao
	(b)		6	1	B1 cao

Q57.

Question		Working	Answer	Mark	Notes
	(a)		8 000 000	1	B1 cao
	(b)		Seven thousand, one hundred and two	1	B1 cao
	(c)		15.5	1	B1 cao
	(d)		420	1	B1 cao

Q58.

Paper: 5MB2F_01					
Question		Working	Answer	Mark	Notes
*			80	4	<p>B1 for $EBF = 50$ or $ABE = 50$</p> <p>M1 for angles given that can lead to $x = 80$ as the next step</p> <p>eg $EBF = 50$ and $ABE = 50$</p> <p>eg $EBF = 50$ and $BFG = 100$</p> <p>eg $EBF = 50$ and $BFE = 80$</p> <p>eg $EBF = 50$ and $DEB = 130$ and $ABE = 50$</p> <p>A1 cao</p> <p>C1 for stating correct reasons appropriate to their method shown</p> <p>eg</p> <p>Base <u>angles</u> of an <u>isosceles</u> triangle are <u>equal</u>.</p> <p>with <u>Angles</u> in a <u>triangle</u> add up to 180°</p> <p>with <u>Alternate angles</u> are equal</p> <p>eg</p> <p>Base <u>angles</u> of an <u>isosceles</u> triangle are <u>equal</u>.</p> <p>with <u>Alternate angles</u> are equal</p> <p>with <u>Angles</u> on a <u>straight line</u> add up to 180°</p> <p>eg</p> <p>Base <u>angles</u> of an <u>isosceles</u> triangle are <u>equal</u>.</p> <p>with The <u>exterior angle</u> of a triangle is <u>equal</u> to the sum of the</p> <p><u>opposite interior angles</u>.</p> <p>with <u>Allied angles</u> / <u>Co-interior angles</u> add up to 180°</p>

Q59.

Question	Working	Answer	Mark	Notes
*	$x+2 + 2x+3 + 2x + x + 3 + 2$ $= 6x + 10$ $= 2(3x + 5)$ OR Half way round $\times 2 =$ $(x+2 + 2x+3) \times 2$ $= 3x + 5$ Perimeter $= 2(3x + 5)$	Proof	4	B1 for $x + 2$ or $2x + 3$ seen M1 for perimeter $= "x+2" + "2x+3" + 2x + x + 3 + 2$ oe A1 for $6x + 10$ C1 (dep) for factorising $6x + 10$ to give $2(3x + 5)$ OR B1 for $x + 2$ or $2x + 3$ seen M1 for $2 \times ("x+2" + "2x+3")$ A1 for $6x + 10$ C1 (dep) for doubling $3x + 5$ to give perimeter $= 2(3x + 5)$

Q60.

	Working	Answer	Mark	Notes
	$4.5 \times 2 + 3 \times 2 =$ 15 or $4 \times 3 + 2 \times 1.5 =$ 15 or $4 \times 4.5 - 2 \times 1.5 =$ 15	7	4	M1 for a correct method to calculate at least one area using correct dimensions M1 for a complete method to find the total area (can be implied by 15) M1 for $"15" \div 2.25 (=6.66...)$ or $2.25 \times 6 (=13.5)$ or $2.25 \times 7 (=15.75)$ or repeated addition to within 2.25 of "15" C1 (dep on at least 1 method mark) for 7 packs clearly identified and supported by their calculations