

Edexcel GCSE

Mathematics 1380

Summer 2009

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Mark Scheme (Results)

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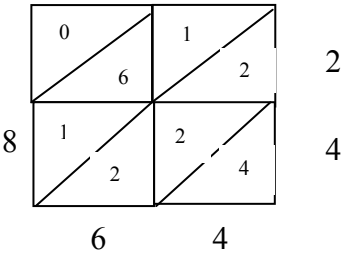
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1380/1F				
Question	Working	Answer	Mark	Notes
1	(a)	8	1	B1 cao
	(b)	3	1	B1 cao
	(c)	3 circles 2.5 circles	2	B1 cao B1 cao
2	$30 - (16 + 9)$	5	2	M1 30 - "(16 + 9)" or "30 - 16" - 9 or "30 - 9" - 16 A1 cao
3	(a)	30	1	B1 for 30
	(b)	5	1	B1 for 5
4	(a)	Correct line	1	B1 For a single line of length in the range 6.8cm to 7.2cm drawn with or without using the given point P
	(b)	Correct point	1	B1 for point Q identified on their line within the range 2.8 cm to 3.2 cm from P
5	(a)	116	1	B1 for 116 [accept 114 if 116 seen on the dotted line in the sequence]
	(b)	112	1	B1 cao
	(c)	it is odd (and all the terms are even)	1	B1 for a correct reason
6	(a)	16	1	B1 cao
	(b)	12 cm ²	2	B1 for 12 cao, B1 (indep) for cm ²
	(c)	15	2	M1 for 5×3 A1 cao [SC: B1 for 10, 13 or 14]

1380/1F					
Question	Working	Answer	Mark	Notes	
7	(a)		08 30	1	B1 for 08 30 oe
	(b)		17	1	B1 cao
	(c)		10 15	1	B1 for 10 15 oe
8	(a)		Four thousand, one hundred and seventeen	1	B1 for four thousand, one hundred and seventeen oe
	(b)		4100	1	B1 for 4100 in figures or words or 41 hundred
9	(a)		8	1	B1 cao
	(b)		C	1	B1 for C or pyramid
10	(a)		58	1	B1 57 to 59 (not inclusive)
	(b)		3.6	1	B1 3.5 to 3.7 (not inclusive)
	(c)	7 – 3.6	3.4	1	B1 for 3.3 to 3.5 (not inclusive) or ft on 7 - “(b)” provided “b” < 7
11	(a)		(4, 6)	1	B1 cao
	(b)		(0, 3)	1	B1 cao
	(c)	$\left(\frac{0+4}{2}, \frac{3+6}{2}\right)$	(2, 4.5)	2	B2 for (2, 4.5) ±0.2 on each coordinate [B1 for (2, b) b ≠ 4.5 or (a, 4.5) a ≠ 2 or (4.5, 2) or $\left(\frac{0+4}{2}, \frac{3+6}{2}\right)$ seen ±0.2 on each coordinate]

1380/1F					
Question	Working	Answer	Mark	Notes	
12	(a)		– 4	1	B1 for –4°C or Edinburgh
	(b)		7	1	B1 for 7 (accept –7)
	(c)		2	1	B1 for 2 or Leeds
13	(a)		Impossible	1	B1 cao
	(b)		Even	1	B1 cao
	(c)		Certain	1	B1 cao
14	(a)		12	1	B1 cao
	(b)		24	1	B1 cao
	(c)		49	1	B1 cao
15	(a)		$4x$	1	B1 for $4x$ (accept $4 \times x$, $x \times 4$, $x4$)
	(b)		y^3	1	B1 cao
	(c)		$2x + 8y$	2	B2 for $2x + 8y$ oe [B1 for $2x$ or $8y$ seen] {Note: $-8y$ seen with no working gets B0 $4x + 2x = 6x$ gets B0}
16	(a)		Diagram (<i>overlay</i>)	2	B2 within guidelines of the overlay (B1 for exactly one given angle correctly drawn within guidelines of overlay)
	(b)		90	1	B1 for an angle in range 86 to 94 or ft 'angle' measured correctly within $\pm 2^\circ$

1380/1F																				
Question	Working	Answer	Mark	Notes																
17	$20 \times 36 = 720$ $4 \times 36 = 144$ <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>30</td> <td>6</td> <td></td> </tr> <tr> <td>20</td> <td>600</td> <td>120</td> <td>720</td> </tr> <tr> <td>4</td> <td>120</td> <td>24</td> <td>144</td> </tr> <tr> <td></td> <td>720</td> <td>144</td> <td></td> </tr> </table> <div style="text-align: center;"> 3 6 </div> 		30	6		20	600	120	720	4	120	24	144		720	144		864	3	<p>M1 for a complete method with relative place value correct. Condone 1 multiplication error, addition not necessary.</p> <p>M1 (dep) for addition of the appropriate elements of the calculation.</p> <p>[Note: Repeated addition of 24 lots of 36 (36 lots of 24) gets M1 only]</p> <p>A1 cao</p>
	30	6																		
20	600	120	720																	
4	120	24	144																	
	720	144																		
18		Ben with a valid reason	2	<p>B2 for Ben and a valid reason, eg 'it should be 180' or 'they are not supplementary (allied, co-interior)' oe This could be implied by 184 or 84 or 92 seen</p> <p>[B1 for Ben and 88+96 or 180 - 88 or 180 - 96 seen or for just a valid reason given (eg without Ben or with James)]</p>																
19	(a)	56 Reason	2	<p>B1 56° cao</p> <p>B1 sum of angles on a straight line is 180°</p>																
	(b)	22	1	B1 cao																

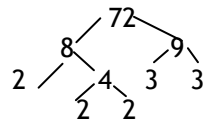
1380/1F					
Question	Working	Answer	Mark	Notes	
20	(a)	$\frac{90}{600}$	$\frac{3}{20}$	2	$\frac{90}{600}$ M1 $\frac{90}{600}$ $\frac{3}{20}$ A1 $\frac{3}{20}$ cao [SC: B1 for 0.15 or 15% if M0 scored]
	(b)	$\frac{180}{600} \times 100$ OR $\frac{180}{600} = \frac{30}{100}$	30	2	$\frac{180}{600} \times 100$ M1 $\frac{180}{600} \times 100$ A1 cao OR $\frac{180}{600} = \frac{30}{100}$ M1 $\frac{180}{600} = \frac{30}{100}$ or attempt to cancel to 100 A1 cao
	(c)	$600 - (90 + 180) = 330$ blue or green $330 \div 3$	110	2	M1 [$600 - (90 + 180)$] $\div 3$ A1 cao [SC: B1 for an answer of 140 or 170 if M0 scored]

1380/1F								
Question	Working				Answer	Mark	Notes	
21	(a)	15	25	14	54	Table	3	B3 for all 5 correct (B2 for 3 or 4 correct) (B1 for 1 or 2 correct)
		22	8	16	46			
		37	33	30	100			
	(b)					$\frac{37}{100}$	1	B1 $\frac{37}{100}$ oe
	(c)					$\frac{24}{46}$	2	B2 for $\frac{''46''-''22''}{'46'}$ oe, ft from no of girls (B1 16 + 8 or 24 or '46' seen)
22						$2c + 4r$	2	B2 for $2c + 4r$ oe [B1 for $2c$ or $4r$ oe seen] Ignore any Left Hand Side = $2c + 4r$ {Note: ignore units or use of 'p'}
23		$360 - (120 + 140 + 58)$				42	2	M1 $360 - (120 + 140 + 58)$ or equivalent) or for $(a + 58 + 120 + 140 = 360)$ oe seen A1 cao [Note: The subtraction MUST be from 360]

1380/1F					
Question	Working	Answer	Mark	Notes	
24	(a)	$4x = 9 - 1$ $\frac{4x}{4} + \frac{1}{4} = \frac{9}{4}$	2	2	M1 for $4x = 9 - 1$ or $\frac{4x}{4} + \frac{1}{4} = \frac{9}{4}$ or a clear intention to either subtract 1 from both sides of the equation or to divide each term by 4 A1 for 2 (accept $\frac{8}{4}$)
	(b)	$2y = 12 + 1$ $\frac{2y}{2} - \frac{1}{2} = \frac{12}{2}$	6.5	2	M1 $2y = 12 + 1$ or $\frac{2y}{2} - \frac{1}{2} = \frac{12}{2}$ or a clear intention to either add 1 to both sides of the equation or divide each term by 2 A1 6.5 oe (accept $\frac{13}{2}$)
25	(a)		Vertices at (2, -2), (7, -2), (7, -6), (4, -6), (4, -4), (2, -4)	2	B2 for a fully correct rotation [B1 for correct shape with correct orientation OR a 90° anticlockwise rotation about O OR a 180° rotation about O OR for any 3 correct sides in the correct position]
	(b)		Translation by $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$	2	B1 for translation B1 (indep) for $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$ or 3 right and 1 down

1380/1F				
Question	Working	Answer	Mark	Notes
26	(a)		1	B1 for a correct explanation
	(b)	$4x - 2x = 12 - 1$	2	M1 for $4x + 1 - 1 - 2x = 2x + 12 - 1 - 2x$ oe A1 for 5.5 or 11/2 or 5½
	(c)	'5.5' $\times 2 +$ $4 \times$ '5.5' $+ 1 +$ $2 \times$ '5.5' $+ 12$	2	M1 for correct substitution of $x =$ '5.5' into the four expressions to find the sum of FOUR sides or $8x + 13$ seen A1 ft
27	(a)		2	M1 rectangle with either correct width or height or any square A1 cao
	(b)		2	B2 for a correct sketch (B1 any 3-D sketch of no more than 4 faces seen, with a trapezoidal face)
28	(a)		2	B1 'What type of magazine do you read?'
	(b)	How many magazines have you read in the last week 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2-3 <input type="checkbox"/> >3 <input type="checkbox"/>	2	B1 for at least 2 magazines identified in response boxes [Note: B0 for any data collection sheet/chart B1 Relevant question that refers to a time period. B1 for at least 3 mutually exclusive response boxes (need not be exhaustive)]

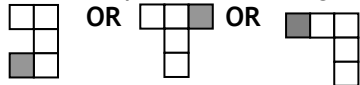

1380/1F				
Question	Working	Answer	Mark	Notes
29	(a)	15.456	1	B1 cao
	(b)	0.15456	1	B1 cao
	(c)	3220	1	B1 cao
30	(a)	6	2	M1 for $72 \div 2$ or 36 seen A1 6 or -6 or ± 6
	(b)	$2 \times 2 \times 2 \times 3 \times 3$	2	M1 for a systematic method of at least 2 correct divisions by a prime number oe factor tree or a full process with one calculation error; can be implied by digits 2, 2, 2, 3, 3 on answer line A1 for $2 \times 2 \times 2 \times 3 \times 3$ or $2^3 \times 3^2$ oe [Note $1 \times 2 \times 2 \times 2 \times 3 \times 3$ gets M1 A0]



1380/2F					
Question	Working	Answer	Mark	Notes	
1	(a)		3.50	1	B1 for 3.50 cao
	(b)		3.05	1	B1 3.05 cao
	(c)		3510	1	B1 for 3510 or 3510.00
2	(a)		right angle marked	1	B1 for the right angle marked with square or R
	(b)		acute angle marked	1	B1 for either (or both) of the acute angles marked
	(c)		kite drawn	1	B1 for a kite drawn (accept square or rhombus or arrowhead)
3	(a)		circle drawn	1	B1 for a circle drawn within guidelines (see overlay)
	(b)		diameter drawn	1	B1 for line through C and touching circle at both ends
4	(a)	$5.85 + 4.90$	10.75	1	B1 for 10.75 cao
	(b)	$60.55 \div 8.65$	7	2	M1 for $60.55 \div 8.65$ or $8.65 \times 7 = 60.55$ or for at least 4 repeated additions or subtractions of 8.65 A1 for 7 cao
	(c)	$8.65 + (4.90 + 4.90)$ $20 - 18.45$	1.55	3	M1 for $8.65 + (4.90 + 4.90)$ M1 (dep) for $20 - '18.45'$ A1 for 1.55 cao SC: award B1 for sight of 18.45 or 6.45 or 10.20 award B2 for 155

1380/2F					
Question	Working	Answer	Mark	Notes	
5	(a)		6	1	B1 for 6 cao
	(b)		diagram	1	B1 for correct diagram (4 vertical sticks and 8 horizontal sticks)
	(c)		12, 15	2	B2 for 12 and 15 (B1 for either 12 or 15 or '12'+3)
	(d)		reason	1	B1 eg for '100 multiplied by 3' or '100 × 3' or '× 3' or 3n (but not 3n + a number) or 'keep adding 3' oe, as long as "3" is mentioned.
6	(a)		Bars at 8 and 5	2	B1 for bar of height 8 (above orange) B1 for bar of height 5 (above green)
	(b)		6	1	B1 for 6 cao
	(c)		yellow	1	B1 ft for yellow or ft from their diagram
	(d)	6 + 10 + 8 + 5	29	1	B1 correct answer or ft by adding the heights of the columns on the graph
7	(i)		cone	1	B1 for cone or alternative spellings only that sound like "cone".
	(ii)		cylinder	1	B1 for cylinder or alternative spellings only that sound like "cylinder". Accept circular based prism.

1380/2F					
Question	Working	Answer	Mark	Notes	
8	(a)	$\frac{9}{12}$	$\frac{3}{4}$	2	B2 for $\frac{3}{4}$ cao (B1 for $\frac{9}{12}$ seen)
	(b)		shading	1	B1 for 6 squares (only) shaded
	(c)		0.3	1	B1 for 0.3 oe
	(d)		$\frac{39}{100}$	1	B1 for $\frac{39}{100}$ oe as a fraction
9	(a)		6.4	1	B1 for 6.2 – 6.6 inclusive; accept 62-66 with mm stated.
	(b)		Midpoint marked	1	B1 for midpoint marked at 3 – 3.4 inclusive
10	(a)		7, 4, 2, 1, 2	2	M1 for at least one correct frequency or tally A1 for 7, 4, 2, 1, 2 cao (B2 for correct frequencies without the use of tallies)
	(b)		2	1	B1 for 2 or ft values in table NB: B0 if the 7 is given with the 2
	(c)	$6 - 2 =$	4	2	M1 for identifying 6 and 2, eg 6-2, as long as 6 and 2 are not identified with any incorrect operation A1 cao

1380/2F					
Question	Working	Answer	Mark	Notes	
11	(a)	$6 \times 3 + 4$	22	2	M1 for 6×3 or for ' 6×3 ' + 4 or 18 seen A1 for 22, accept 22.00 or 22.0
	(b)	$52 - 4 = 48$ $48 \div 6 =$	8	3	M1 for $52 - 4$ or 48 seen M1 (dep) for ' $52 - 4$ ' $\div 6$ or $48 \div 6$ A1 for 8 cao Alternative method: M2 for a systematic attempt using $6 \times d + 4$ at least twice with at least one d greater than 5 with correct answers A1 for 8 cao
12	(a)		33	1	B1 for 33 cao
	(b)		180	1	B1 for 180 cao
	(c)		110 marked	1	B1 for 110 marked cao
	(d)		0.27 marked	1	B1 for 0.27 marked cao
13	(i)		12	1	B1 for 12 cao
	(ii)		3	1	B1 for 3 cao
	(iii)		3 or 11	1	B1 for 3 and/or 11 cao
14	(a)		Shading	1	B1 for one square shaded to get one of 
	(b)		Shading	1	B1 for one square shaded to get 

1380/2F				
Question	Working	Answer	Mark	Notes
15	$\frac{1}{6} \times 36 = 6$ $\frac{2}{9} \times 36 = 8$ $36 - (8 + 6)$	22	3	<p>M1 for $\frac{1}{6} \times 36$ or $36 \div 6$; $\frac{2}{9} \times 36$ or $36 \div 9 \times 2$ or 8 seen or 14 seen or $\frac{1}{6} + \frac{2}{9}$ or $\frac{7}{18}$ oe or 6 seen as long as not with incorrect working.</p> <p>M1 (dep) for $36 - '(8+6)'$ or $36 - \left(\frac{2}{9} + \frac{1}{6}\right) \times 36$ or $\left(1 - \frac{1}{6} + \frac{2}{9}\right) \times 36$</p> <p>A1 for 22 cao</p> <p>SC B2 for $\frac{22}{36}$ oe fraction</p>
16	$10/72 \times 360 = 50$ perch $23/72 \times 360 = 115$ bream $39/72 \times 360 = 195$ carp	50, 115, 195	4	<p>M1 for evidence of method for at least one angle (could be implied by one correct angle on pie chart or in the table)</p> <p>A2 all three angles drawn $\pm 2^\circ$ tolerance, any order (A1 at least one angle correctly drawn $\pm 2^\circ$, or all three angles in the table)</p> <p>B1 names of fish as labels (dep on at least one angle drawn correctly, and exactly three sectors; initials will do)</p> <p>NB: Ignore table if pie chart provides marks</p>
17		87.75	2	<p>M1 for $3 \times 4.5 \times 6.5$ seen or implied eg from answer of 87.7 or 87.8 or 88 (with no other working shown)</p> <p>A1 for 87.75 cao</p>

1380/2F					
Question	Working	Answer	Mark	Notes	
18	(a)	$1.8 \times -8 + 32$	17.6	2	M1 for 1.8×-8 or -14.4 or $\frac{-72}{5}$ seen or $32 - '1.8 \times 8'$ or $1.8 \times -8 + 32$ seen A1 for 17.6 or $\frac{88}{5}$ or 17.60 oe
	(b)	$68 = 1.8C + 32$ $1.8C = 68 - 32$ $C = 36 \div 1.8$	20	2	M1 for $68 - 32$ or 36 or $68 = 1.8C + 32$ seen; condone replacement of C by another letter. A1 for 20 cao NB Trial and improvement score 0 or 2
19			construction	2	M1 for a pair of arcs drawn from the same centre on 2 lines at same distance from meeting point; or a single arc crossing both lines; using an arc with a radius which is the length of the shorter line will imply an intersection with the end of that line. ($\pm 2\text{mm}$) A1 for bisector ($\pm 2^\circ$) and correct arcs SC: B1 for bisector ($\pm 2^\circ$) with no arcs, or incorrect arcs if M0 awarded. Accept bisectors that are dashed or dotted.
20	(a)	325×1.68	546	2	M1 for 325×1.68 seen or digits 546 A1 for 546, accept 546.00, 546.0
	(b)	$117 \div 1.5$	78	2	M1 for $117 \div 1.5$ seen or digits 78 A1 for 78, accept 78.00, 78.0

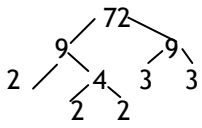


1380/2F				
Question	Working	Answer	Mark	Notes
21	(a)		1	B1 for plotting both points (65, 100), (80, 110) correctly (tolerance one square); ignore any additional plots given.
	(b)		1	B1 for positive (correlation) or length increases with height oe
	(c)		2	M1 for a single line segment with positive gradient that could be used as a line of best fit or a vertical line from 76 A1 for given answer in the range 105 – 110
22	(a)		2	B2 for correct shape; any orientation. (B1 for any two sides correct or all correct for scale factor other than 1 or 2), tolerance to within half square
	(b)		2	B1 for reflection, reflect, reflected. B1 for line $x = 0$ or y -axis NB: more than one transformation should be awarded 0 marks.
23	(a)		1	B1 for $4m$ oe
	(b)		1	B1 for $4pq$ or $4qp$ or $p4q$ oe
	(c)	$5 \times 3x - 5 \times 2$	1	B1 for $15x - 10$ cao
	(d)	$3y \times y + 3y \times 4$	2	M1 for $3y \times y + 3y \times 4$ or $3y^2 + a$ or $3y^2 + ay$ or $b + 12y$ or $by^2 + 12y$ where a, b are integers, and can be zero A1 for $3y^2 + 12y$ or $3 \times y^2 + 12 \times y$

1380/2F					
Question	Working	Answer	Mark	Notes	
24	(a)	$18 \div 6 : 12 \div 6$	3 : 2	2	M1 for 18 : 12 or 12 : 18 or 1.5:1 or 1:0.67 oe or correct ratio reversed eg 2:3 A1 for 3 : 2 or 1 : 0.6 ... [recurring]
	(b)	$5 + 1 = 6$ $54 \div 6 = 9$ 5×9	45	2	M1 for $\frac{5}{5+1} \times 54$ or $\frac{1}{5+1} \times 54$ or $54 \div '5+1'$ or 54×5 or 270 or 9 : 45 or 9 seen, as long as it is not associated with incorrect working. A1 for 45 cao
25		$15 \times 3 = 45$ 15×3.5 $25 \times 9 = 225$ 25×9.5 $20 \times 15 = 300$ 20×15.5 $12 \times 21 = 252$ 12×21.5 $8 \times 27 = 216$ 8×27.5 $1038 \div 80 =$ $1078 \div 80 =$	12.97 - 13.48	4	M1 for fx consistently within interval including ends (allow 1 error) M1 (dep) consistently using appropriate midpoints M1 (dep on first M) for $\Sigma fx \div \Sigma f$ A1 for 12.97 - 13.48
26	(a)	t^{6+2}	t^8	1	B1 for t^8 or for t^{6+2}
	(b)	m^{8-3}	m^5	1	B1 for m^5 or for m^{8-3}
27	(a)	$4.6 + 3.85 = 8.45$ $3.2^2 - 6.51 = 3.73$ $8.45 \div 3.73 =$	2.26541555	2	M1 for $\frac{169}{20}$ or $\frac{256}{25}$ or $\frac{373}{100}$ or 3.73 or 10.24 or 8.45 seen A1 for 2.265(41555); accept $\frac{845}{373}$
	(b)		2	1	B1 ft for 2 or follow through their answer to part (a) NB: 2.0 gets B0

1380/2F					
Question	Working	Answer	Mark	Notes	
28		$(0.5 \times 3.14... \times 8) + 8$	20.56 - 20.58	3	M2 for $(0.5 \times \pi \times 8)$ or $\pi \times 4$ or $(\pi \times 8 + 8)$ or $(0.5 \times \pi \times 8 + 8)$ oe (M1 for $\pi \times 8$ or $2\pi \times 4$; for a value 25.1-25.2 inclusive unless seen with incorrect working eg πr^2) A1 for 20.56 – 20.58 (SC: B2 if M0 scored for 12.56 - 12.58)

1380/3H											
Question		Working				Answer	Mark	Notes			
1	(a)	15	25	14	54	Table	3	B3 for all 5 correct (B2 for 3 or 4 correct) (B1 for 1 or 2 correct)			
		22	8	16	46						
		37	33	30	100						
	(b)					$\frac{37}{100}$	1	$\frac{37}{100}$ B1 oe			
2	(c)					$2x + 8y$	2	B2 for $2x + 8y$ oe [B1 for $2x$ or $8y$ seen] {Note: $-8y$ seen with no working gets B0 $4x + 2x = 6x$ gets B0}			
	(b)					$2c + 4r$	2	B2 for $2c + 4r$ oe [B1 for $2c$ or $4r$ oe seen] Ignore any Left Hand Side = $2c + 4r$ {Note: ignore units or use of 'p'}			
3	(a)	x	-2	-1	0	1	2	3	-7, 1, 5	2	B2 all 3 correct (B1 for 1 or 2 correct)
		y	-11	-7	-3	1	5	9			
	(b)					Graph	2	B2 for correct line between $x = -2$ and $x = 3$ (B1ft for plotting 5 of their points correctly or for a straight line with gradient 4 or for a straight line passing through (0, -3))			

1380/3H					
Question	Working	Answer	Mark	Notes	
4	(a)	$50 = 4k - 10$ $4k = 60$	15	2	M1 for $50 = 4k - 10$ oe A1 cao
	(b)	$y = 4 \times 2 - 3 \times 5$	-7	2	M1 for $4 \times 2 - 3 \times 5$ oe A1 cao
5	(a)		Vertices at (2, -2), (7, -2), (7, -6), (4, -6), (4, -4), (2, -4)	2	B2 for a fully correct rotation [B1 for correct shape with correct orientation OR a 90° anticlockwise rotation about O OR a 180° rotation about O OR for any 3 correct sides in the correct position]
	(b)		Translation by $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$	2	B1 for translation B1 (indep) for $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$ or 3 right and 1 down
6	(a)		opp sides are equal	1	B1 for a correct explanation
	(b)	$4x - 2x = 12 - 1$	5.5	2	M1 for $4x + 1 - 1 - 2x = 2x + 12 - 1 - 2x$ oe A1 for 5.5 or 11/2 or 5½
	(c)	$'5.5' \times 2 + 4 \times '5.5' + 1 + 2 \times '5.5' + 12$	57	2	M1 for correct substitution of $x = '5.5'$ into the four expressions to find the sum of FOUR sides or $8x + 13$ seen A1 ft
7	(a)		15.456	1	B1 cao
	(b)		0.15456	1	B1 cao
	(c)		3220	1	B1 cao

1380/3H				
Question	Working	Answer	Mark	Notes
8	(a) $x^2 = 72 \div 2$	6	2	M1 for $72 \div 2$ or 36 seen A1 6 or -6 or ± 6
	(b) $72 = 2 \times 36 = 2 \times 2 \times 18$ $= 2 \times 2 \times 2 \times 9$ 	$2 \times 2 \times 2 \times 3 \times 3$	2	M1 for a systematic method of at least 2 correct divisions by a prime number or factor tree or a full process with one calculation error; can be implied by digits 2, 2, 2, 3, 3 on answer line A1 for $2 \times 2 \times 2 \times 3 \times 3$ or $2^3 \times 3^2$ or [Note $1 \times 2 \times 2 \times 2 \times 3 \times 3$ gets M1 A0]
9	(a)		2	M1 rectangle with either correct width or height or any square A1 cao
	(b)		2	B2 for a correct sketch (B1 any 3-D sketch of no more than 4 faces seen, with a trapezoidal face)
10	$\frac{40000}{125} = \frac{8000}{25} = 320$ seconds	320	3	M1 for 40×1000 or $125 \div 1000$ or 40000 or 0.125 M1 for $\frac{40000}{125}$ or $\frac{40}{0.125}$ A1 cao OR M1 for $1000 \div 125$ M1 for '8' $\times 40$ A1 cao

1380/3H					
Question	Working	Answer	Mark	Notes	
11	(a)		62.5	1	B1 cao
	(b)		63.5	1	B1 for 63.5 (accept 63.49 or 63.49.. or any evidence that the 9 is recurring or 63.499 or better)
12			Diagram	4	M1 arc radius 4 cm centre <i>B</i> within the guidelines M1 angle bisector from <i>A</i> to <i>BC</i> within the guidelines A1 for clear indication that inside of arc is being identified as correct region for the first condition, or that side of straight line nearer to <i>C</i> is identified as correct region for the second condition. (Note that only 1 of the Ms need be awarded for this A mark to be awarded) A1 fully correct region Ignore any drawing outside the given triangle
13	(a)			2	B1 'What type of magazine do you read?'
	(b)		How many magazines have you read in the last week 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2-3 <input type="checkbox"/> >3 <input type="checkbox"/>	2	B1 for at least 2 magazines identified in response boxes [Note: B0 for any data collection sheet/chart] B1 Relevant question that refers to a time period. B1 for at least 3 mutually exclusive response boxes (need not be exhaustive)
14		$\frac{7 \times 200}{0.05} = \frac{1400}{0.05}$	28000	3	B1 for any two of 7, 200 or 0.05 M1 for correct processing of at least two of 7, 200 or 190 and 0.05 or 0.1 A1 26600 - 28000

1380/3H				
Question	Working	Answer	Mark	Notes
15	(a)		1	B1 cao
	(b)		1	B1 cao
16	(a)		2	B2 (B1 for $x(4x - 6y)$ or $2(2x^2 - 3xy)$ or $2x$ (two terms) or $4x(x - 1.5y)$)
	(b)	$x^2 - x + 6x - 6 =$ $x(x - 1) + 6(x - 1)$	2	B2 cao (B1 $(x - 6)(x + 1)$ or $(x - 6)(x - 1)$ or $x(x - 1) + 6(x - 1)$ or $x(x + 6) - (x + 6)$)
17	(a)		2	B1 6 or 7 points plotted correctly ± 1 full (2mm) square B1 (dep) for points joined by curve or line segments provided no gradient is negative - ignore any part of graph outside range of their points (SC: B1 if 6 or 7 points plotted not at end but consistent within each interval and joined)
	(b)		2	B2 if answer is in the range 235 - 245 OR M1 (dep on graph being cf) for using cf = 60 or 60.5 A1 ft (± 1 square)
	(c)		1	B1ft correct comment comparing money spent by men with money spent by women

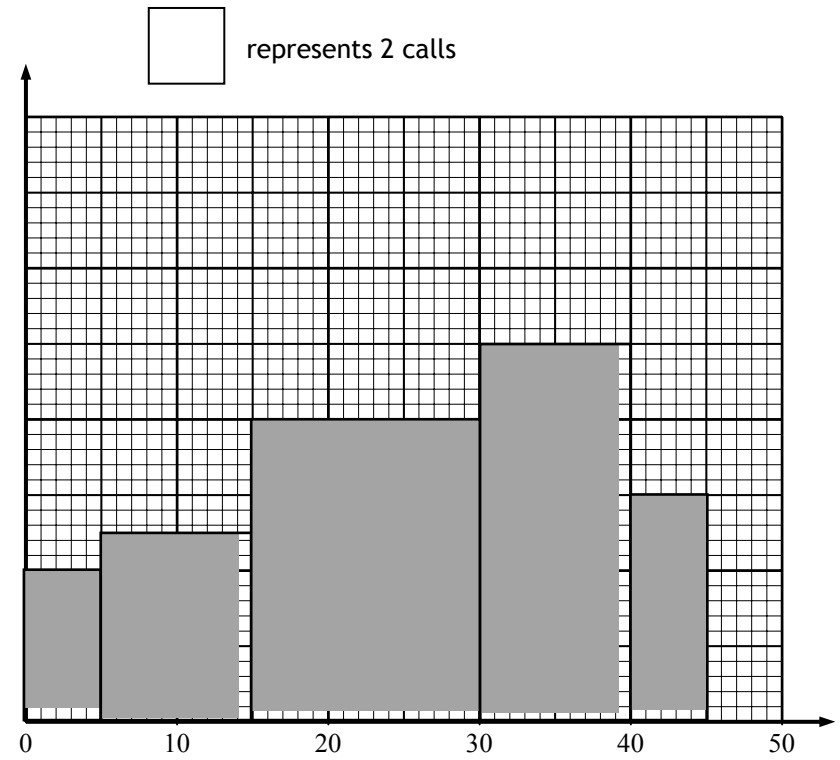
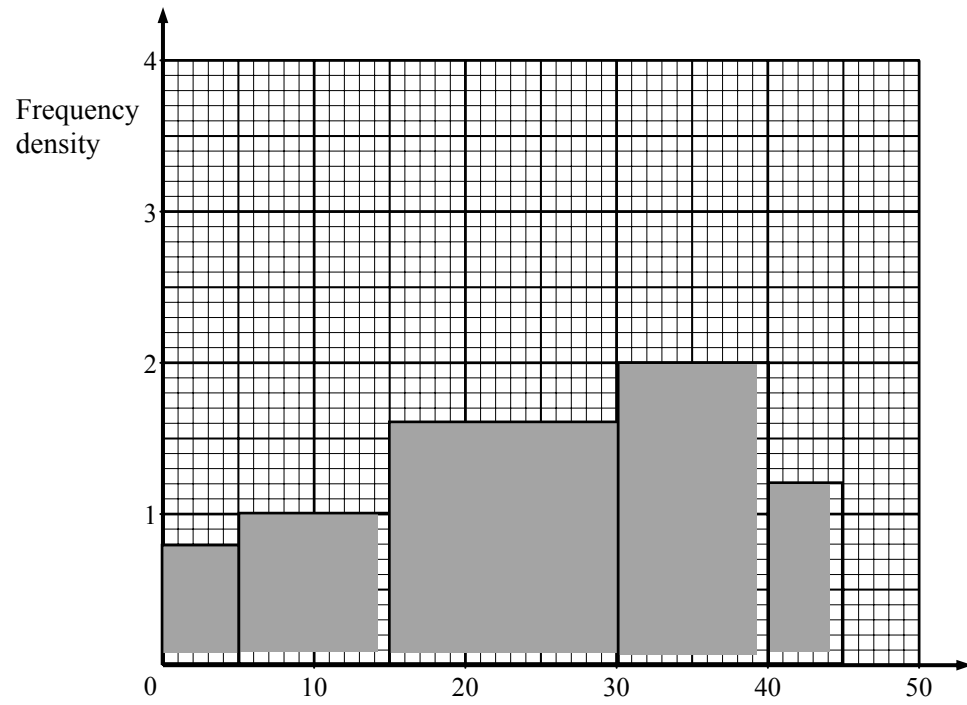
1380/3H					
Question	Working	Answer	Mark	Notes	
18	(a)	$AOD = 90 - 36$ or $180 - (90 + 36)$	54	2	M1 $AOD = 90 - 36$ or $180 - (90 + 36)$ A1 cao
	(b)(i)	$ABC = AOD \div 2$	27	2	M1 $ABC = AOD \div 2$ A1 ft from '54'
	(ii)		Reason	1	B1 Angle at centre = twice angle at circumference
19	(a)		$x = 2, y = 3$	1	B1 cao
	(b)		$y = \frac{1}{2}x + 4$	2	M1 for $y = mx + 4$ or $y = \frac{1}{2}x + c, c \neq 2$, or $\frac{1}{2}x + 4$ A1 for $y = \frac{1}{2}x + 4$ oe
20	(a)	$3t + 1 < t + 12$ $3t - t < 12 - 1$ $2t < 11$	$t < 5.5$	2	M1 $3t - t < 12 - 1$ A1 $t < 5.5$ oe (B1 for $t = 5.5$ or $t > 5.5$ or 5.5 or $t \leq 5.5$ or $t \geq 5.5$ on the answer line)
	(b)		5	1	B1 for 5 or ft (a)
21		$M = kL^3$ $k = \frac{M}{L^3} = \frac{160}{8} = 20$ When $L = 3, M = 20 \times 3^3$	540	4	M1 for $M \propto L^3$ or $M = kL^3$ A1 $k = 20$ M1 for '20' $\times 3^3$ A1 for 540 cao

1380/3H										
Question	Working						Answer	Mark	Notes	
22		F	4	10	24	20	6	Correct histogram	4	<p>M1 use of frequency density as frequency \div width (can be implied by two correct frequency densities or two correct bars with different widths) or area (can be implied by one correct bar) to represent frequency</p> <p>A2 for all 5 histogram bars correct $\pm\frac{1}{2}$ square (A1 at least 3 correct histogram bars $\pm\frac{1}{2}$ square)</p> <p>A1 for correct label and scale numbered appropriately or for key and consistent scaling</p>
		Fd	0.8	1	1.6	2	1.2			
		or								
		F	4	10	24	20	6			
		Fd	4	5	8	10	6			
23	(a)							Correct diagram	2	B1 for 0.2 oe seen on bottom left branch B1 for correct probabilities on other branches
	(b)	$\text{prob}(WW) = 0.5 \times 0.5$						0.25	2	M1for $0.5 \times '0.5'$ A1ft for 0.25 oe

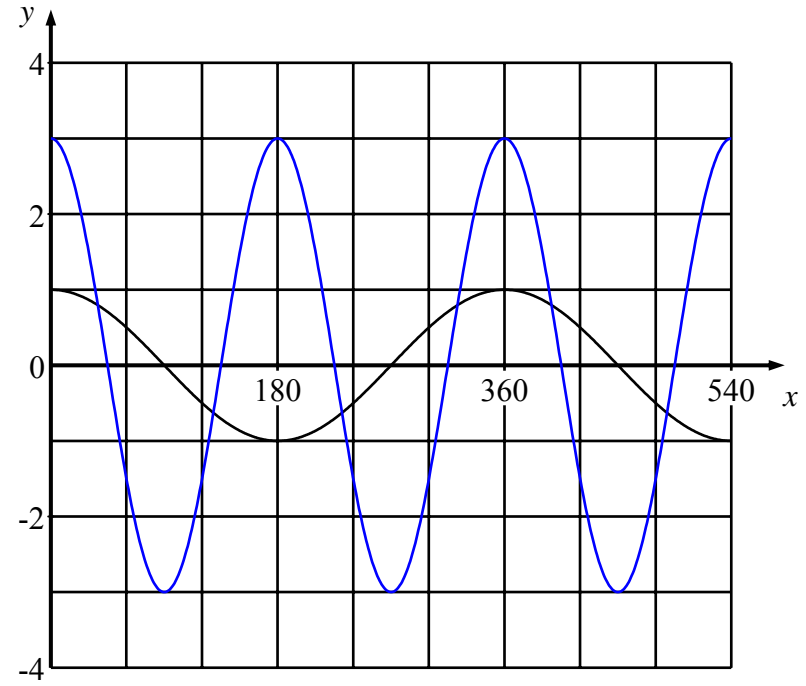
1380/3H					
Question	Working	Answer	Mark	Notes	
24	(a)	$AB = AC$ (equilateral triangle) AD is common $\angle ADC = \angle ADB$ ($= 90^\circ$ given) $\triangle ADC \cong \triangle ADB$ (RHS) OR $\angle DAC = \angle DAB$ (since $\angle ACD = \angle ABD$ and $\angle ADC = \angle ADB$) $AB = AC$ (equilateral triangle) AD is common $\triangle ADC \cong \triangle ADB$ (SAS) OR $\angle DAC = \angle DAB$ (since $\angle ACD = \angle ABD$ and $\angle ADC = \angle ADB$) AD is common $\angle ACD = \angle ABD$ (equilateral triangle) $\triangle ADC \cong \triangle ADB$ (AAS)	Proof	3	M1 for any three correct statements (which do not have to be justified) that together lead to a congruence proof (ignore irrelevant statements) A1 for a full justification of these statements A1 for RHS, SAS, AAS, ASA or SSS as appropriate NB The two A marks are independent
	(b)	$BD = DC$ (congruent \triangle s) $BC = AB$ (equilateral \triangle s) Hence $BD = \frac{1}{2} AB$	Proof	2	B1 for $BD = DC$ and $BC = AB$ B1 for justification of these statements and completion of proof

1380/3H				
Question	Working	Answer	Mark	Notes
25	(a)		3	
	(b)		2	
26	(a)		2	
	(b)		2	

Examples:



26.



1380/4H					
Question		Working	Answer	Mark	Notes
1	(a)	325×1.68	546	2	M1 for 325×1.68 seen or digits 546 A1 for 546, accept 546.00, 546.0
	(b)	$117 \div 1.5$	78	2	M1 for $117 \div 1.5$ seen or digits 78 A1 for 78, accept 78.00, 78.0
2	(a)		Correct shape	2	B2 for correct shape; any orientation. (B1 for any two sides correct or all correct for scale factor other than 1 or 2), tolerance to within half square
	(b)		Reflection in line $x = 0$	2	B1 for reflection, reflect, reflected. B1 for line $x = 0$ or y-axis NB: more than one transformation should be awarded 0 marks.
3		$1^2 + 1$ $2^2 + 1$ $3^2 + 1$	2, 5, 10	2	M1 for 1^2+1 or 2^2+1 or 3^2+1 (but not 1^2+1 , 2^2+2 , 3^2+3) A1 for 2, 5, 10 SC: B1 for 1, 2, 5 with or without working
4	(a)		(65, 100), (80, 110) plotted	1	B1 for plotting both points (65, 100), (80, 110) correctly (tolerance one square); ignore any additional plots given.
	(b)		positive (correlation)	1	B1 for positive (correlation) or length increases with height oe
	(c)		105 - 110	2	M1 for a single line segment with positive gradient that could be used as a line of best fit or a vertical line from 76 A1 for given answer in the range 105 – 110

1380/4H				
Question	Working	Answer	Mark	Notes
5	$143.64 \div 19 = 7.56$ $7.56 \times 31 =$	234.36	3	M1 for $143.64 \div 19$ (or 7.56 seen) or 143.64×31 (or 4452.84 seen) M1(dep) for '7.56' $\times 31$ or '4452.84' $\div 19$ or $143.64 + 12 \times '7.56'$ A1 for 234.36 cao accept 234.36p Alternative method: M1 for $\frac{31}{19}$ (or 1.63(1...) seen) M1 (dep) '1.63...' $\times 143.64$ A1 for 234.36 cao accept 234.36p
6	(a) $1.8 \times -8 + 32$ (b) $68 = 1.8C + 32$ $1.8C = 68 - 32$ $C = 36 \div 1.8$	17.6 20	2 2	M1 for 1.8×-8 or -14.4 or $\frac{-72}{5}$ seen or $32 - '1.8 \times 8'$ or $1.8 \times -8 + 32$ seen A1 for 17.6 or $\frac{88}{5}$ or 17.60 oe M1 for $68 - 32$ or 36 or $68 = 1.8C + 32$ seen; condone replacement of C by another letter. A1 for 20 cao NB Trial and improvement score 0 or 2
7		diagram	3	M1 for line drawn or point marked within guidelines from <i>P</i> M1 for line drawn or point marked within guidelines from <i>Q</i> up to top guideline from <i>P</i> A1 for point indicated within region where guidelines intersect

1380/4H																																	
Question	Working	Answer	Mark	Notes																													
8	(a)	$18 \div 6 : 12 \div 6$	3 : 2	2	M1 for 18 : 12 or 12 : 18 or 1.5:1 oe or any correct ratio reversed eg 2:3 A1 for 3 : 2 or 1 : 0.6 ... [recurring]																												
	(b)	$5 + 1 = 6$ $54 \div 6 = 9$ 5×9	45	2	M1 for $\frac{5}{5+1} \times 54$ or $\frac{1}{5+1} \times 54$ or $54 \div '5+1'$ or 54×5 or 270 or 9 : 45 or 9 seen, as long as it is not associated with incorrect working. A1 for 45 cao																												
9		<table border="1"> <tbody> <tr><td>2</td><td>48</td></tr> <tr><td>3</td><td>87</td></tr> <tr><td>2.5</td><td>65.(625)</td></tr> <tr><td>2.6</td><td>69.(576)</td></tr> <tr><td>2.7</td><td>73.(683)</td></tr> <tr><td>2.65</td><td>71.6(09)</td></tr> <tr><td>2.61</td><td>69.9(79)</td></tr> <tr><td>2.62</td><td>70.3(84)</td></tr> <tr><td>2.63</td><td>70.7(91)</td></tr> <tr><td>2.64</td><td>71.1(99)</td></tr> <tr><td>2.66</td><td>72.(021)</td></tr> <tr><td>2.67</td><td>72.4(34)</td></tr> <tr><td>2.68</td><td>72.8(48)</td></tr> <tr><td>2.69</td><td>73.2(65)</td></tr> </tbody> </table>	2	48	3	87	2.5	65.(625)	2.6	69.(576)	2.7	73.(683)	2.65	71.6(09)	2.61	69.9(79)	2.62	70.3(84)	2.63	70.7(91)	2.64	71.1(99)	2.66	72.(021)	2.67	72.4(34)	2.68	72.8(48)	2.69	73.2(65)	2.6	4	B2 for trial $2.6 \leq x \leq 2.7$ evaluated (B1 for trial $2 \leq x \leq 3$ evaluated) B1 for different trial $2.6 < x \leq 2.65$ B1(dep on at least one previous B1) for 2.6 Values evaluated can be rounded or truncated, but to at least 2sf when x has 1dp and 3sf when x has 2dp NB Allow 72 for evaluation using $x = 2.66$ NB No working scores no marks even if answer is correct
2	48																																
3	87																																
2.5	65.(625)																																
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2.68	72.8(48)																																
2.69	73.2(65)																																
10			construction	2	M1 for arcs from same centre on 2 lines at same distance from meeting point ($\pm 2\text{mm}$) A1 for bisector ($\pm 2^\circ$) and correct arcs SC: B1 for bisector ($\pm 2^\circ$) with no arcs, or incorrect arcs if M0 awarded. Accept bisectors that are dashed or dotted.																												

1380/4H				
Question	Working	Answer	Mark	Notes
11		2 + 'prime number' is odd	2	<p>M1 for a counter example showing intent to add 2 and another prime number; ignore incorrect examples A1 for a correctly evaluated counter example with no examples given that involve either non-primes or incorrect evaluation</p> <p>Alternative method B2 for fully correct explanation '2 is a prime number, odd + even (or 2) = odd' oe with no accompanying incorrect statements or examples (B1 for '2 is a prime number' or recognition that not all prime numbers are odd or odd + even (or 2) = odd; ignore incorrect examples or statements)</p>
12	$15 \times 3 = 45$ 15×3.5 $25 \times 9 = 225$ 25×9.5 $20 \times 15 = 300$ 20×15.5 $12 \times 21 = 252$ 12×21.5 $8 \times 27 = 216$ 8×27.5 $1038 \div 80 =$ $1078 \div 80 =$ 12.975 13.475	12.97 - 13.48	4	<p>M1 for fx consistently within interval including ends (allow 1 error) M1 (dep) consistently using appropriate midpoints M1 (dep on first M) for $\Sigma fx \div \Sigma f$ A1 for 12.97 - 13.48 with no arithmetic errors</p>

1380/4H					
Question	Working	Answer	Mark	Notes	
13		$(0.5 \times 3.14... \times 8) + 8$	20.56 - 20.58	3	M2 for $(0.5 \times \pi \times 8)$ or $\pi \times 4$ or $(\pi \times 8 + 8)$ or $(0.5 \times \pi \times 8 + 8)$ oe (M1 for $\pi \times 8$ or $2\pi \times 4$; for a value 25.1-25.2 inclusive unless seen with incorrect working eg πr^2) A1 for 20.56 – 20.58 (SC: B2 if M0 scored for 12.56 - 12.58)
14	(a)		a^3	1	B1 for a^3 cao
	(b)	$5 \times 3x - 5 \times 2$	$15x - 10$	1	B1 for $15x - 10$ cao
	(c)	$3y \times y + 3y \times 4$	$3y^2 + 12y$	2	M1 for $3y \times y + 3y \times 4$ or $3y^2 + a$ or $3y^2 + ay$ or $b + 12y$ or $by^2 + 12y$ where a, b are integers, and can be zero A1 for $3y^2 + 12y$ or $3 \times y^2 + 12 \times y$ NB: If more than 2 terms in expansion MOA0
	(d)	$2x - 8 + 3x + 6$	$5x - 2$	2	M1 for $2 \times x - 2 \times 4$ or $2x - 8$ or $3 \times x + 3 \times 2$ or $3x + 6$ A1 for $5x - 2$ cao
	(e)	$x^2 + 4x - 3x - 12$	$x^2 + x - 12$	2	M1 for 4 terms correct with or without signs, or 3 out of no more than 4 terms, with correct signs (the terms may be in an expression or table) or $x(x-3) + 4(x-3)$ or $x(x+4) - 3(x+4)$ A1 for $x^2 + x - 12$ cao
15		$4.6 + 3.85 = 8.45$ $3.2^2 - 6.51 = 3.73$ $8.45 \div 3.73 =$	2.26541555	2	M1 for $\frac{169}{20}$ or $\frac{256}{25}$ or $\frac{373}{100}$ or 3.73 or 10.24 or 8.45 seen A1 for 2.265(41555); accept $\frac{845}{373}$

1380/4H					
Question	Working	Answer	Mark	Notes	
16	(a)	t^{6+2}	t^8	1	B1 for t^8 or for t^{6+2}
	(b)	m^{8-3}	m^5	1	B1 for m^5 or for m^{8-3}
	(c)	$2^3 \times x^3$	$8x^3$	2	B2 for $8x^3$ cao (B1 for ax^3 , $a \neq 8$ or $2x \times 2x \times 2x$ or $8x^n$ $n \neq 0,3$)
	(d)	$3 \times 4 \times a^{2+5} \times h^{1+4}$	$12a^7h^5$	2	B2 for $12a^7h^5$ (B1 for $12a^7h^n$, $n \neq 0,5$ or $12a^mh^5$, $m \neq 0,7$ or ka^7h^5 , $k \neq 12$ or $3 \times 4 \times a^{2+5} \times h^{1+4}$)
17	$9^2 - 6^2$ $81 - 36 = 45$ $\sqrt{45}$	6.705 - 6.71	3	M1 for $9^2 - 6^2$ or $81 - 36$ or 45 or $9^2 = AB^2 + 6^2$ oe M1 for $\sqrt{81-36}$ or $\sqrt{45}$ A1 for 6.705 - 6.71 [SC: M1 for $\sqrt{81+36}$ or $\sqrt{117}$]	
18	(a)		Heaviest bag is 29kg	1	B1 for 23kg is the upper quartile oe, or the heaviest bag is 29kg oe, or 25% of bags are heavier than 23kg or range is 5 - 29 oe
	(b)		17	1	B1 for 17 cao
	(c)	23 - 10	13	1	B1 for 13 cao
	(d)	$\frac{25}{100} \times 240$	60	2	M1 for $\frac{25}{100} \times 240$ oe or $\frac{25}{100} \times 241$ oe A1 for 60 cao (SC: B1 for 25% or 0.25 or quarter seen)

1380/4H					
Question	Working	Answer	Mark	Notes	
19	(a)	4500×1.04^2	4867.20	3	M1 for 4500×1.04 or for $4500 + 0.04 \times 4500$ or for 4680 or 180 or 360 or 4860 M1 (dep) '4680' $\times 1.04$ or for '4680' $+ 0.04 \times '4680'$ A1 for 4867.2(0) cao (If correct answer seen then ignore any extra years) Alternative method M2 for 4500×1.04^2 or 4500×1.04^3 A1 for 4867.2(0) cao [SC: 367.2(0) seen B2]
	(b)	2400×1.075^n 2580 2773.5 2981.5125 3205.12... 3445.51...	5	2	M1 for an attempt to evaluate 2400×1.075^n for at least one value of n (not equal to 1) or $3445.51 \div 1.075^n$ ($n \geq 2$) or $\frac{3445.51}{2400}$ ($=1.4356\dots$) and 1.075^n evaluated, $n \geq 2$ A1 for 5 cao

1380/4H					
Question	Working	Answer	Mark	Notes	
20	(a)	$\cos x = \frac{5}{8}$	51.3 - 51.35	3	<p>M1 for $\cos(x =) \frac{5}{8}$</p> <p>M1 for $\cos^{-1} \frac{5}{8}$ or $\cos^{-1} 0.625$, or $\cos^{-1}(5 \div 8)$</p> <p>A1 for 51.3 - 51.35 (SC B2 for 0.89 - 0.9 or 57 - 57.1 seen)</p> <p>Alternative Scheme $h^2 = 8^2 - 5^2 (=39)$</p> <p>M1 for $\sin(x =) \frac{\sqrt{39}}{8}$ or $\tan(x =) \frac{\sqrt{39}}{5}$ or</p> <p>$\frac{\sin x}{\sqrt{39}} = \frac{\sin 90}{8}$ oe or</p> <p>$(\sqrt{39})^2 = 8^2 + 5^2 - 2 \times 8 \times 5 \times \cos x$</p> <p>M1 for $\sin^{-1}(\frac{\sqrt{39}}{8})$ or $\sin^{-1}(\frac{\sqrt{39} \times \sin 90}{8})$ or</p> <p>$\tan^{-1}(\frac{\sqrt{39}}{5})$ or $\cos^{-1}(\frac{8^2 + 5^2 - (\sqrt{39})^2}{2 \times 8 \times 5})$</p> <p>A1 for 51.3 - 51.35</p>

1380/4H					
Question	Working	Answer	Mark	Notes	
	(b)	$\tan 40 = \frac{y}{12.5}$ $y = 12.5 \times \tan 40$	10.4 - 10.5	3	M1 for $\tan 40 = \frac{y}{12.5}$ M1 for $12.5 \times \tan 40$ A1 for 10.4 - 10.5 SC: B2 for $\pm(13.9 - 14.0)$ or 9 - 9.1 seen Alternative scheme M1 for $\frac{y}{\sin 40} = \frac{12.5}{\sin 50}$ oe M1 for $y = \frac{12.5}{\sin 50} \times \sin 40$ A1 for 10.4 - 10.5 SC: B2 for $\pm(35.4 - 35.5)$ or 10.39 - 10.396 seen
21	(a)	$\frac{26}{258} \times 50$	5	2	M1 for $\frac{a}{258} \times 50$ or $50 \div \frac{258}{a}$ oe, $a < 258$ or 5.03(8...) or $26 \div 5.16$ A1 for 5 cao
	(b)	$\frac{(25+48+62)}{258} \times 50$	26	2	M1 for $\frac{135}{258} \times 50$ or $\frac{(25+48+62)}{258} \times 50$ or $\left(\frac{25}{258} \times 50 + \frac{48}{258} \times 50 + \frac{62}{258} \times 50 \right)$ oe or 26.1(6...) or $5 + 9 + 12$ or $135 \div 5.16$ A1 for 26 or 27

1380/4H				
Question	Working	Answer	Mark	Notes
22	$(9n^2 + 6n + 1) -$ $(9n^2 - 6n + 1)$ $= 12n$	$12n$ correct comment	3	M1 for $(3n)^2 + 3n + 3n + 1$ or $(3n)^2 - 3n - 3n + 1$ or $((3n + 1) - (3n - 1))((3n + 1) + (3n - 1))$ A1 for $12n$ from correct expansion of both brackets A1 for $12n$ is a multiple of 4 or $12n = 3 \times 4n$ or $12n = 4 \times 3n$ or $\frac{12n}{4} = 3n$ or $\frac{12n}{3} = 4n$ NB: Trials using different values for n score no marks.
23	(a) (b) $\vec{OP} = \vec{OA} + \vec{AP}$ $\vec{OP} = a + \frac{3}{5}(\mathbf{b} - \mathbf{a})$ $\vec{OP} = \frac{1}{5}(2\mathbf{a} + 3\mathbf{b})$	$\mathbf{b} - \mathbf{a}$ proof	1 3	B1 for $\mathbf{b} - \mathbf{a}$ or $-\mathbf{a} + \mathbf{b}$ oe M1 for $\vec{OP} = \vec{OA} + \vec{AP}$ oe or $\vec{OP} = \vec{OB} + \vec{BP}$ oe M1 for $\vec{AP} = \frac{3}{5} \times \mathbf{“(b - a)”}$ oe or $\vec{BP} = \frac{2}{5} \times \mathbf{“(a - b)”}$ oe A1 for $a + \frac{3}{5} \times (\mathbf{b} - \mathbf{a})$ oe or $\mathbf{b} + \frac{2}{5} \times (\mathbf{a} - \mathbf{b})$ oe leading to given answer with correct expansion of brackets seen

1380/4H				
Question	Working	Answer	Mark	Notes
24	$\frac{1}{2} \times 6 \times 6 \times \sin 60$ $- \frac{60}{360} \times \pi \times 3^2$ $= 15.588 - 4.712$	10.8 - 10.9	4	<p>M1 for $\frac{1}{2} \times 6 \times 6 \times \sin 60$ or for $0.5 \times 6 \times \sqrt{6^2 - 3^2}$ or 15.5 - 15.6 or 14.5 - 14.6 or $\pm 5.48(65\dots)$</p> <p>M1 for $\frac{60}{360} \times \pi \times 3^2 (= 4.712\dots)$</p> <p>M1(dep on 1 previous M1) for 'area of triangle' – 'area of sector'</p> <p>A1 for 10.8 – 10.9</p> <p>SC: B3 for 10.1 - 10.2 or 9.84 - 9.85</p>
25	$\frac{(x-3)\cancel{(x-5)}}{(2x+3)\cancel{(x-5)}}$	$\frac{(x-3)}{(2x+3)}$	3	<p>B1 for $(x-3)(x-5)$ or $x(x-5) - 3(x-5)$</p> <p>M1 for $(2x \pm 3)(x \pm 5)$ or $2x(x+5) \pm 3(x+5)$ or $2x(x-5) \pm 3(x-5)$</p> <p>A1 for $\frac{(x-3)}{(2x+3)}$ cao as final answer</p>

1380/4H				
Question	Working	Answer	Mark	Notes
26	$\frac{5}{20} \times \frac{7}{19} + \frac{5}{20} \times \frac{8}{19} + \frac{7}{20} \times \frac{5}{19} +$ $\frac{7}{20} \times \frac{8}{19} + \frac{8}{20} \times \frac{5}{19} + \frac{8}{20} \times \frac{7}{19}$ <p>or</p> $\left(\frac{5}{20} \times \frac{15}{19} + \frac{7}{20} \times \frac{13}{19} + \frac{8}{20} \times \frac{12}{19} \right)$ <p>or</p> $1 - \left(\frac{5}{20} \times \frac{4}{19} + \frac{7}{20} \times \frac{6}{19} + \frac{8}{20} \times \frac{7}{19} \right)$	$\frac{131}{190}$	4	<p>M1 for at least one product of the form $\frac{a}{20} \times \frac{b}{19}$</p> <p>M1 for identifying all products (condone 2 errors in 6 products, 1 error in 3 products)</p> <p>Either</p> $\left(\frac{5}{20} \times \frac{7}{19}, \frac{5}{20} \times \frac{8}{19}, \frac{7}{20} \times \frac{5}{19}, \frac{7}{20} \times \frac{8}{19}, \frac{8}{20} \times \frac{5}{19}, \frac{8}{20} \times \frac{7}{19} \right)$ <p>or</p> $\left(\frac{5}{20} \times \frac{15}{19}, \frac{7}{20} \times \frac{13}{19}, \frac{8}{20} \times \frac{12}{19} \right)$ <p>or</p> $\left(\frac{5}{20} \times \frac{4}{19}, \frac{7}{20} \times \frac{6}{19}, \frac{8}{20} \times \frac{7}{19} \right)$ <p>M1 (dep) for</p> $\left(\frac{5}{20} \times \frac{7}{19} + \frac{5}{20} \times \frac{8}{19} + \frac{7}{20} \times \frac{5}{19} + \frac{7}{20} \times \frac{8}{19} + \frac{8}{20} \times \frac{5}{19} + \frac{8}{20} \times \frac{7}{19} \right)$ <p>oe</p> <p>or $\left(\frac{5}{20} \times \frac{15}{19} + \frac{7}{20} \times \frac{13}{19} + \frac{8}{20} \times \frac{12}{19} \right)$ oe</p> <p>or $1 - \left(\frac{5}{20} \times \frac{4}{19} + \frac{7}{20} \times \frac{6}{19} + \frac{8}{20} \times \frac{7}{19} \right)$ oe</p> <p>A1 for $\frac{131}{190}$ oe or 0.68947... correct to at least 2 decimal places or answer that rounds to 0.69</p> <p>NB : If decimals used for products then must be correct to at least 2 decimal places</p>

				<p>With replacement M0 M1 for identifying all products (condone 2 errors in 6 products, 1 error in 3 products) either $\left(\frac{5}{20} \times \frac{7}{20}, \frac{5}{20} \times \frac{8}{20}, \frac{7}{20} \times \frac{5}{20}, \frac{7}{20} \times \frac{8}{20}, \frac{8}{20} \times \frac{5}{20}, \frac{8}{20} \times \frac{7}{20}\right)$ or $\left(\frac{5}{20} \times \frac{5}{20}, \frac{7}{20} \times \frac{7}{20}, \frac{8}{20} \times \frac{8}{20}\right)$ or $\left(\frac{5}{20} \times \frac{15}{20}, \frac{7}{20} \times \frac{13}{20}, \frac{8}{20} \times \frac{12}{20}\right)$</p> <p>M1 (dep) for $\left(\frac{5}{20} \times \frac{7}{20} + \frac{5}{20} \times \frac{8}{20} + \frac{7}{20} \times \frac{5}{20} + \frac{7}{20} \times \frac{8}{20} + \frac{8}{20} \times \frac{5}{20} + \frac{8}{20} \times \frac{7}{20}\right)$ or $\left(\frac{5}{20} \times \frac{15}{20} + \frac{7}{20} \times \frac{13}{20} + \frac{8}{20} \times \frac{12}{20}\right)$ or $1 - \left(\frac{5}{20} \times \frac{5}{20} + \frac{7}{20} \times \frac{7}{20} + \frac{8}{20} \times \frac{8}{20}\right)$</p> <p>A0 for $\frac{262}{400}$ oe or 0.655 (NB: $\frac{262}{400}$ oe or 0.655 implies M2)</p> <p>Partial replacement SC: B2 for $\frac{141}{200}$ oe or 0.705 or $\frac{121}{190}$ oe or 0.6368... correct to at least 2 decimal places</p>
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