2010 HSC General Mathematics Marking Guidelines

Section I

Question	Answer
1	C
2	D
3	B
4	A
5	A
6	D
7	C
8	C
9	C
10	D
11	D
12	C
13	B
14	A
15	A
16	B
17	B
18	B
19	A
20	D
21	B
22	D

Section II

Question 23 (a)

Criteria	Marks
• Correct numerical expression or correct answer	2

• Progress towards correct answer
 	
eg • 1586.70 × 52
 	
   OR
 	
   • 0.035 × 1586.70
	1

Question 23 (b) (i)

Criteria	Marks
• Correct answer	1

Question 23 (b) (ii)

Criteria	Marks
• Correct answer	1

Question 23 (b) (iii)

Criteria	Marks
• Correct numerical expression in m^2	2
• Correct numerical expression in mm^2 or equivalent	1

Question 23 (c) (i)

Criteria	Marks
• Correct answer/correct numerical expression	1

Question 23 (c) (ii)

Criteria	Marks
• Correct numerical expression	1

Question 23 (d) (i)

Criteria	Marks
• Correct answer or correct numerical expression	1

Question 23 (d) (ii)

Criteria	Marks
• Correct numerical expression	1

Question 23 (d) (iii)

Criteria	Marks

• Correct reallocation of funds to a minimum total of $220 with reasoning
Eg:
 – In two weeks he could not buy clothes and gifts so saves
    2 × $50 = $100
 – In two weeks he could not use his entertainment money so saves
    2 × $70 = $140
    Total: $100 + $140 = $240 which is more than $220 which covers the bill
 – Not buy gifts and clothes and reduce entertainment to $60 per week
 – Money comes from budget that is a want not a need eg clothes and gifts, entertainment etc, NOT rent, car registration, electricity, insurance
	3

• Significant progress towards correct answer ie correct calculation but flawed reasoning	2
• Progress towards correct answer ie $620 − $400 = $220 short	1

Question 24 (a) (i)

Criteria	Marks
• Correct answer	1

Question 24 (a) (ii)

Criteria	Marks
• Correct solution OR • Correct solution from their Line 2 (no bald solution)	1

Question 24 (b)

Criteria	Marks
• $x = 4$ And $x = 4$ is the break even point OR • After $x = 4$, $I > C$ or Ashley starts to make a profit	2
• $x = 4$ OR • Break even point	1

Question 24 (c) (i)

Criteria	Marks
• Correct numerical expression or correct answer	1

Question 24 (c) (ii)

Criteria	Marks
• Correct answer	1

Question 24 (c) (iii)

Criteria	Marks
• Correct answer $81\frac{1}{2}\%$	2
• Progress towards correct answer (eg $\frac{1}{2} \times 68\%$, $\frac{1}{2} \times 95\%$)	1

Question 24 (d) (i)

Criteria	Marks
• 53°8'	3
• Correct numerical expression • Significant progress towards correct answer • Correct calculation with incorrect rounding	2
• Progress towards correct answer eg • Correct rounding with evidence of a trig ratio • Evidence of understanding of angle of depression	1

Question 24 (d) (ii)

Criteria	Marks
• Correct numerical expression	2
• Significant progress towards correct answer eg $\tan 28° = \dfrac{168}{AC}$	1

Question 25 (a) (i)

Criteria	Marks
• Correct construction of the median regression line	2
• Recognises the three medians	1

Question 25 (a) (ii)

Criteria	Marks
• Correct from extrapolation of their graph	1

Question 25 (b)

Criteria	Marks
• Correct numerical expression, ignore subsequent error	2
• Correct calculation from incorrect table value with working OR • Correct calculation of total amount paid	1

Question 25 (c) (i)

Criteria	Marks
• Correct numerical expression	2
• Angle of 14° OR • Correct time for incorrect distance	1

Question 25 (c) (ii)

Criteria	Marks
• Correct answer OR • 11 pm with working	2
• 20 hours *or* 4 hours OR • Bald 11 pm	1

Question 25 (d)

Criteria	Marks
• Correct calculations with appropriate justifications	4
• Correct calculations or correct numerical expression OR • Significant progress towards the correct calculation with appropriate justifications	3
• Significant progress towards the correct calculation OR • Progress towards the correct calculation with appropriate justifications	2
• Progress towards the correct calculation	1

Question 26 (a) (i)

Criteria	Marks
• Correct numerical expression	1

Question 26 (a) (ii)

Criteria	Marks
• Correct numerical expression	2
• Progress towards correct numerical expression	1

Question 26 (b) (i)

Criteria	Marks
• Correct answer	1

Question 26 (b) (ii)

Criteria	Marks
• Correct ogive shown	1

Question 26 (b) (iii)

Criteria	Marks
• Answer correct from their graph	1

Question 26 (b) (iv)

Criteria	Marks
• Reasonable possible problem based on median comparison with a possible solution	2
• Problem only with no solution offered OR • Solution to a correct implied problem	1

Question 26 (c)

Criteria	Marks
• Correct numerical expression or –$0.90 or in words, a loss of 90 cents	2
• Significant progress towards the correct answer	1

Question 26 (d)

Criteria	Marks
• Correct answer or correct numerical expression in area formula	3
• Correct substitution into cosine rule formula with incorrect or no evaluation and correct substitution into area formula with incorrect angle OR • $\angle A$, $\angle B$ or $\angle C$ found correctly	2
• Correct substitution into area formula using their angle and appropriate sides OR • Correct substitution into cosine rule formula	1

Question 27 (a)

Criteria	Marks
• Correct expression	3
• Correct use of two operations/processes eg • Cancelling and multiplication OR • Inverting and cancelling	2

• Correct use of one operation/process
 	
eg • Cancelling only
 	
OR
 	
  • Multiplication only
 	
OR
 	
  • Inverting second fraction
	1

Question 27 (b) (i)

Criteria	Marks
• Correct answer	1

Question 27 (b) (ii)

Criteria	Marks
• Correct answer based on the answer to 27(b)(i)	1

Question 27 (b) (iii)

Criteria	Marks
• Two correct comparisons that are age related	2
• One correct comparison that is age related	1

Question 27 (b) (iv)

Criteria	Marks
• Suitable implication that is age related	1

Question 27 (c) (i)

Criteria	Marks
• Correct answer	1

Question 27 (c) (ii)

Criteria	Marks
• Suitable numerical expression using values from graph	1

Question 27 (c) (iii)

Criteria	Marks
• Correct answer	1

Question 27 (c) (iv)

Criteria	Marks
• Correct answer. Words are acceptable as correct answer	2
• Progress towards correct answer	1

Question 28 (a) (i)

Criteria	Marks
• Correct answer	1

Question 28 (a) (ii)

Criteria	Marks
• Correct answer with suitable calculations	3
• Calculation error with correct justification • Evidence of calculation of both the salary and monthly repayment	2
• Correct calculation of either 30% of monthly salary OR monthly repayment, with no conclusion or incorrect conclusion	1

Question 28 (a) (iii)

Criteria	Marks
• 2 correct statements	2
• 1 correct statement	1

Question 28 (b) (i)

Criteria	Marks
• Correct solution	1

Question 28 (b) (ii)

Criteria	Marks
• Correct numerical expression OR • Correct from previous answer	2
• Progress towards correct numerical expression	1

Question 28 (b) (iii)

Criteria	Marks
• Needs correct expression for both volumes where one diameter is twice the other and correct statement	2
• Attempts to calculate correct volume for one can • Shows $d \rightarrow 2d$ with some error	1

Question 28 (b) (iv)

Criteria	Marks
• Correct radius and correct height	2
• Finding a height correctly using an incorrect radius	1

General Mathematics
2010 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Section I			
1	1	DA3	P4
2	1	FM3	P2, P8
3	1	M4	P2, P6
4	1	DA6	H4
5	1	FM2	P2
6	1	DA7	H4, H11
7	1	AM3	H2
8	1	PB2	P10
9	1	M6	H6
10	1	M6	H2, H6
11	1	FM6	H5, H8
12	1	DA5, PB4	H4, H10
13	1	AM4	H3, H5
14	1	PB3	H2, H3
15	1	M7	H6
16	1	DA5	H4, H9
17	1	M2	P2, P6
18	1	AM3	H2
19	1	M5	H6
20	1	PB3	H10
21	1	DA5	H4
22	1	FM4	H8
Section II			
23 (a)	2	FM1	P2, P8
23 (b) (i)	1	M3	P2
23 (b) (ii)	1	M3	P2
23 (b) (iii)	2	M2, M3	P2, P6
23 (c) (i)	1	DA3	P4
23 (c) (ii)	1	PB2	P2, P10
23 (d) (i)	1	FM1	P2
23 (d) (ii)	1	FM1	P2, P8
23 (d) (iii)	3	FM1	P2, P8, P11
24 (a) (i)	1	AM1	P2
24 (a) (ii)	1	AM1	P2
24 (b)	2	AM2, AM4	P3, P5, H2, H5

Question	Marks	Content	Syllabus outcomes
24 (c) (i)	1	DA6	H4, H9
24 (c) (ii)	1	DA6	H4, H9
24 (c) (iii)	2	DA6	H4, H9
24 (d) (i)	3	M4	P6
24 (d) (ii)	2	M6	H2, H6
25 (a) (i)	2	DA7	H4
25 (a) (ii)	1	DA7	H4, H5
25 (b)	2	FM4	H2
25 (c) (i)	2	M7	H2, H6
25 (c) (ii)	2	M7	H6, H7
25 (d)	4	FM5	H2, H5, H8, H11
26 (a) (i)	1	PB3	H10
26 (a) (ii)	2	PB3	H10
26 (b) (i)	1	DA3	P4
26 (b) (ii)	1	DA3	P4
26 (b) (iii)	1	DA3	P4
26 (b) (iv)	2	DA4	P4, P11
26 (c)	2	PB4	H4, H10
26 (d)	3	M6	H2, H6, H7
27 (a)	3	AM3	H2
27 (b) (i)	1	DA5	H5
27 (b) (ii)	1	DA5	H2
27 (b) (iii)	2	DA5	H4, H5
27 (b) (iv)	1	DA1, DA5	P11, H4, H5, H11
27 (c) (i)	1	AM2, FM3	P2
27 (c) (ii)	1	AM2	P5 (lead in)
27 (c) (iii)	1	FM3	P5 (lead in)
27 (c) (iv)	2	AM2, AM4, DA7, FM3	P3, P5, P8, H5
28 (a) (i)	1	FM4	H2, H5, H8
28 (a) (ii)	3	FM4	H2, H5, H8
28 (a) (iii)	2	AM4, FM4	H2, H5, H8, H11
28 (b) (i)	1	M2	P6 (lead in)
28 (b) (ii)	2	M5	H6
28 (b) (iii)	2	AM4, M5	H2, H3, H5, H7, H11
28 (b) (iv)	2	AM4	H2, H3, H5, H7, H11