BOARD OF STUDIES
NEW SOUTH WALES

2009 HSC General Mathematics
Marking Guidelines

Section I

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

Section II

Question 23 (a) (i)

Outcomes assessed: P2, P6, P7

MARKING GUIDELINES

Criteria	Marks
• Correct equation	1

Question 23 (a) (ii)

Outcomes assessed: P2, P6, P7

MARKING GUIDELINES

Criteria	Marks
• Correct angle	2
• Significant progress towards finding an angle	1

Question 23 (b) (i)

Outcomes assessed: P10

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	1

Question 23 (b) (ii)

Outcomes assessed: P10

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	1

Question 23 (c) (i)

Outcomes assessed: H6

MARKING GUIDELINES

Criteria	Marks
• Correct area (CNE)	2
• Significant progress towards finding the area	1

Question 23 (c) (ii)

Outcomes assessed: P2

MARKING GUIDELINES

Criteria	Marks
• Correct answer or number of whole boxes	2
• Progress towards answer (eg increasing previous answer by 10%)	1

Question 23 (d) (i)

Outcomes assessed: P2

MARKING GUIDELINES

Criteria	Marks
• Correct answer	3
• Significant progress towards finding the result (eg adding all the fees without the monthly fee)	2
• Progress towards finding total amount (eg identifying two fees correctly OR correctly identifying monthly account fee)	1

Question 23 (d) (ii)

Outcomes assessed: P2, P11

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 24 (a) (i)

Outcomes assessed: P2

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 24 (a) (ii)

Outcomes assessed: P2

MARKING GUIDELINES

Criteria	Marks
• Correct answer OR correct numerical expression	1

Question 24 (b) (i)

Outcomes assessed: H4

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 24 (b) (ii)

Outcomes assessed: H4

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 24 (c)

Outcomes assessed: P11

MARKING GUIDELINES

Criteria	Marks
• Correct example with justification	2
• An age-related facility or service with no reason (e.g. build a preschool)	1

Question 24 (d) (i)

Outcomes assessed: P3

MARKING GUIDELINES

Criteria	Marks
• Correct equation	1

Question 24 (d) (ii)

Outcomes assessed: P5

MARKING GUIDELINES

Criteria	Marks
• Correct explanation	1

Question 24 (d) (iii)

Outcomes assessed: H3, H5

MARKING GUIDELINES

Criteria	Marks
• Correct evidence for the comparison	2
• ONE correct substitution	1

Question 24 (e) (i)

Outcomes assessed: H8

MARKING GUIDELINES

Criteria	Marks
• Correct equation with substitution	1

Question 24 (e) (ii)

Outcomes assessed: H2, H5, H8, H11

MARKING GUIDELINES

Criteria	Marks
• Correct statement	2
• Correct substitution for declining balance equation	1

Question 25 (a)

Outcomes assessed: H3

MARKING GUIDELINES

Criteria	Marks
• Correct simplification	2
• Progress towards correct simplification	1

Question 25 (b)

Outcomes assessed: H7

MARKING GUIDELINES

Criteria	Marks
• Correct answer	2
• Progress towards answer (eg answer in mg)	1

Question 25 (c) (i)

Outcomes assessed: H2, H6

MARKING GUIDELINES

Criteria	Marks
• Correct answer OR correct numerical expression	3
• Significant progress towards (eg calculation of grass area OR attempt to directly use Simpson's Rule to find area of lake with values correct)	2
• Some progress towards (eg one application of Simpson's Rule on grass area OR correct area of rectangle plus an attempt to use Simpson's Rule OR Attempt to directly use Simpson's Rule to find area of lake with at least one of the ordinates correct)	1

Question 25 (c) (ii)

Outcomes assessed: P6, H2

MARKING GUIDELINES

Criteria	Marks
• Correct answer or correct numerical expression	2
• Progress towards (eg volume in cubic metres)	1

Question 25 (d) (i)

Outcomes assessed: H9

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 25 (d) (ii)

Outcomes assessed: H5, H9

MARKING GUIDELINES

Criteria	Marks
• Correct answer or correct numerical expression	3
• Significant progress towards answer eg correct percentage for one of regions	2
• Some progress towards answer eg finding z-score for 38.4	1

Question 26 (a) (i)

Outcomes assessed: H4, H9

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 26 (a) (ii)

Outcomes assessed: H4, H9

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 26 (a) (iii)

Outcomes assessed: H4, H9

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 26 (b) (i)

Outcomes assessed: H7

MARKING GUIDELINES

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

Question 26 (b) (ii)

Outcomes assessed: H7

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 26 (b) (iii)

Outcomes assessed: H7

MARKING GUIDELINES

Criteria	Marks
• Correct answer including the day	2
• Progress towards answer (eg Wednesday 6pm)	1

Question 26 (c) (i)

Outcomes assessed: H5, H8

MARKING GUIDELINES

Criteria	Marks
• Correct answer OR correct numerical expression	1

Question 26 (c) (ii)

Outcomes assessed: H5, H8

MARKING GUIDELINES

Criteria	Marks
• ***A*** and ***B*** correct OR correct numerical expressions	2
• Either correct ***A*** or significant progress towards ***B***	1

Question 26 (c) (iii) (1)

Outcomes assessed: H5, H8

MARKING GUIDELINES

Criteria	Marks
• Correct formula with correct substitution	1

Question 26 (c) (iii) (2)

Outcomes assessed: H5, H8

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 27 (a) (i)

Outcomes assessed: H8

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	1

Question 27 (a) (ii)

Outcomes assessed: H5, H8

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	1

Question 27 (a) (iii)

Outcomes assessed: H8, H11

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	3
• Significant progress towards (eg evidence of n and r ie 8.2857)	2
• Progress towards solution (eg • conversion of n or r to 1% or 8 periods • evidence of subtraction of investment)	1

Question 27 (b) (i)

Outcomes assessed: H6, H7

MARKING GUIDELINES

Criteria	Marks
• Correct answer or correct numerical expression	1

Question 27 (b) (ii)

Outcomes assessed: H6, H7

MARKING GUIDELINES

Criteria	Marks
• Correct answer	2
• Progress towards (eg an attempt at using the cosine rule)	1

Question 27 (b) (iii)

Outcomes assessed: H6

MARKING GUIDELINES

Criteria	Marks
• Correct numerical expression	1

Question 27 (c)

Outcomes assessed: H4, H10, H11

MARKING GUIDELINES

Criteria	Marks
• A clear statement that 0.02 is greater than 0.0199 with correct calculations obtaining 0.02 and 0.0199	4
• Significant progress towards answer (eg correct calculation of both probabilities OR correct numerical expression)	3
• Progress towards answer (eg Mary's correctly calculated PLUS progress towards Jane's probabilities)	2
• Calculation OR correct numerical expression for Mary $\frac{2}{100}$	1

Question 28 (a) (i)

Outcomes assessed: H3, H5

MARKING GUIDELINES

Criteria	Marks
• Correct sketch in positive quadrant	1

Sample answer:

Question 28 (a) (ii)

Outcomes assessed: H3, H5

MARKING GUIDELINES

Criteria	Marks
• Correct answer	2
• Significant progress towards answer, eg finding stopping distance for 70 km/h	1

Question 28 (b) (i)

Outcomes assessed: H4

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 28 (b) (ii)

Outcomes assessed: H4

MARKING GUIDELINES

Criteria	Marks
• Correct equation	2
• Progress towards, eg finding gradient	1

Question 28 (c)

Outcomes assessed: H2, H3, H5

MARKING GUIDELINES

Criteria	Marks
• Correct answer or correct numerical expression	3
• Significant progress towards, eg finding k	2
• Progress towards, eg stating $h = kd^2$	1

Question 28 (d)

Outcomes assessed: H4, H10, H11

MARKING GUIDELINES

Criteria	Marks
• Draws a correct conclusion with correct calculations	4
• Significant progress towards answer (eg sample space and expected frequencies of differences)	3
• Progress towards answer (eg sample space including differences)	2
• Some progress towards (eg progress towards correct sample space)	1

General Mathematics

2009 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Section I			
1	1	PB1 – The language of chance	P10
2	1	AM2 – Modelling linear relationships	P5
3	1	DA4 – Summary statistics	P2, P9
4	1	M4 – Right-angled triangles	P2, P6
5	1	DA1 – Statistics and society	P9
6	1	FM2 – Investing money AM4 – Modelling linear and non-linear relationships	P2, P8, H2, H5
7	1	PB3 – Multi-stage events	H10
8	1	DA5 – Interpreting sets of data	H4
9	1	PB4 – Applications of probability	H10
10	1	FM1 – Earning money	P2
11	1	M5 – Further applications of area and volume	H6
12	1	M1 – Units of measurement	P2
13	1	AM2 – Modelling linear relationships	P3
14	1	AM3 – Algebraic skills and techniques	H2
15	1	AM3 – Algebraic skills and techniques	H2
16	1	AM4 – Modelling linear and non-linear relationships	H2, H5
17	1	FM5 – Annuities and loan repayments	H2, H5
18	1	DA2 – Data collection and sampling	P9
19	1	M2 – Applications of area and volume	P6
20	1	FM4 – Credit and borrowing	H2, H8
21	1	DA4 – Summary statistics	P2
22	1	M6 – Applications of trigonometry	H6
Section II			
23 (a) (i)	1	M4 – Right-angled triangles	P2, P6, P7
23 (a) (ii)	2	M4 – Right-angled triangles	P2, P6, P7
23 (b) (i)	1	PB1 – The language of chance	P10
23 (b) (ii)	1	PB2 – Relative frequency and probability	P10
23 (c) (i)	2	M5 – Further applications of area and volume	H6
23 (c) (ii)	2	M1 – Units of measurement	P2
23 (d) (i)	3	FM1 – Earning money	P2
23 (d) (ii)	1	FM1 – Earning money	P2, P11
24 (a) (i)	1	DA3 – Displaying single data sets DA4 – Summary statistics	P2
24 (a) (ii)	1	DA3 – Displaying single data sets DA4 – Summary statistics	P2
24 (b) (i)	1	DA5 – Interpreting sets of data	H4

Question	Marks	Content	Syllabus outcomes
24 (b) (ii)	1	DA5 – Interpreting sets of data	H4
24 (c)	2	DA1 – Statistics and society	P11
24 (d) (i)	1	AM2 – Modelling linear relationships	P3
24 (d) (ii)	1	AM2 – Modelling linear relationships	P5
24 (d) (iii)	2	AM3 – Algebraic skills and techniques	H3, H5
24 (e) (i)	1	FM6 – Depreciation	H8
24 (e) (ii)	2	FM6 – Depreciation AM4 – Modelling linear and non-linear relationships	H2, H5, H8, H11
25 (a)	2	AM3 – Algebraic skills and techniques	H3
25 (b)	2	AM3 – Algebraic skills and techniques	H7
25 (c) (i)	3	M5 – Further applications of area and volume	H2, H6
25 (c) (ii)	2	M2 – Applications of area and volume	P6, H2
25 (d) (i)	1	DA6 – Applications of normal distribution	H9
25 (d) (ii)	3	DA6 – Applications of normal distribution	H5, H9
26 (a) (i)	1	DA5 – Interpreting sets of data	H4, H9
26 (a) (ii)	1	DA5 – Interpreting sets of data	H4, H9
26 (a) (iii)	1	DA5 – Interpreting sets of data	H4, H9
26 (b) (i)	2	M7 – Spherical geometry	H7
26 (b) (ii)	1	M7 – Spherical geometry	H7
26 (b) (iii)	2	M7 – Spherical geometry	H7
26 (c) (i)	1	FM4 – Credit and borrowing	H5, H8
26 (c) (ii)	2	FM4 – Credit and borrowing	H5, H8
26 (c) (iii) (1)	1	FM5 – Annuities and loan repayments	H5, H8
26 (c) (iii) (2)	1	FM5 – Annuities and loan repayments	H5, H8
27 (a) (i)	1	FM5 – Annuities and loan repayments	H8
27 (a) (ii)	1	FM5 – Annuities and loan repayments	H5, H8
27 (a) (iii)	3	FM5 – Annuities and loan repayments	H8, H11
27 (b) (i)	1	M6 – Applications of trigonometry	H6, H7
27 (b) (ii)	2	M6 – Applications of trigonometry	H6, H7
27 (b) (iii)	1	M6 – Applications of trigonometry	H6
27 (c)	4	PB3 – Multi-stage events	H4, H10, H11
28 (a) (i)	1	AM4 – Modelling linear and non-linear relationships	H3, H5
28 (a) (ii)	2	AM4 – Modelling linear and non-linear relationships	H3, H5
28 (b) (i)	1	DA7 – Correlation	H4
28 (b) (ii)	2	DA7 – Correlation	H4
28 (c)	3	AM4 – Modelling linear and non-linear relationships	H2, H3, H5
28 (d)	4	PB4 – Applications of probability	H4, H10, H11