



**BOARD OF STUDIES**  
NEW SOUTH WALES

## **2012 HSC General Mathematics Marking Guidelines**

### **Section I**

#### **Multiple-choice Answer Key**

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

**Section II****Question 26 (a) (i)**

Criteria	Marks
• Correct numerical expression	1

**Question 26 (a) (ii)**

Criteria	Marks
• Correct numerical expression	1

**Question 26 (b)**

Criteria	Marks
• Correct numerical expression	2
• Progress towards OR • Correct use of wrong depreciation formula	1

**Question 26 (c)**

Criteria	Marks
• Correct numerical expression	2
• Progress towards	1

**Question 26 (d) (i)**

Criteria	Marks
• All correct	2
• Progress towards	1

**Question 26 (d) (ii)**

Criteria	Marks
• F	1

**Question 26 (e) (i)**

Criteria	Marks
• Correct answer	1

**Question 26 (e) (ii)**

Criteria	Marks
• Correct answer with justification	1

**Question 26 (f)**

Criteria	Marks
• Correct numerical expression	2
• Progress towards correct answer eg $n = 240$ or correct working for 2008 with incorrect $n$	1

**Question 26 (g)**

Criteria	Marks
• Correct solution	2
• Progress towards solution	1

**Question 27 (a)**

Criteria	Marks
• Correct answer	3
• Significant progress towards eg weekly household expenses or annual net pay	2
• Progress towards eg calculating deductions	1

**Question 27 (b)**

Criteria	Marks
• Correct numerical expression	2
• Progress towards eg calculation of arc length	1

**Question 27 (c) (i)**

Criteria	Marks
• Correct numerical expression	1

**Question 27 (c) (ii)**

Criteria	Marks
• Correct numerical expression	1

**Question 27 (d)**

Criteria	Marks
• Correct answer OR • Correct numerical expression	3
• Significant progress towards eg calculation of longer horizontal distance	2
• Progress towards eg height of steps = $3 \times 13$ (or using a diagram) = 39 cm AND sum of treads = $2 \times 30$ = 60 cm	1

**Question 27 (e) (i)**

<b>Criteria</b>	<b>Marks</b>
• Fully correct	2
• Progress towards eg no subtraction OR any two probabilities correct	1

**Question 27 (e) (ii)**

<b>Criteria</b>	<b>Marks</b>
• Correct numerical expression	1

**Question 27 (e) (iii)**

<b>Criteria</b>	<b>Marks</b>
• Correct numerical expression	2
• Progress towards eg one combination only	1

**Question 28 (a)**

Criteria	Marks
• Correct diagram	2
• Progress towards	1

**Question 28 (b)**

Criteria	Marks
• Correct fully simplified algebraic expression	2
• Progress towards eg correct simplification of two steps	1

**Question 28 (c)**

Criteria	Marks
• Correct answer	3
• Significant progress towards eg correct equation	2
• Progress towards eg correct ratio	1

**Question 28 (d) (i)**

Criteria	Marks
• Correct answer	1

**Question 28 (d) (ii)**

Criteria	Marks
• Three correct statements	3
• Two correct statements	2
• One correct statement or correct metalanguage without comparison	1

**Question 28 (e)**

Criteria	Marks
• Correct numerical expression	4
• Significant progress towards calculation of rate eg divide interest by 3	3
• Progress towards eg calculation of interest	2
• Some progress towards eg calculation of deposit or total repayments or balance	1

**Question 29 (a) (i)**

Criteria	Marks
• Correct answer	1

**Question 29 (a) (ii)**

Criteria	Marks
• Correct answer	1

**Question 29 (a) (iii)**

Criteria	Marks
• Correct relationship	1

**Question 29 (b)**

Criteria	Marks
• Correct conclusion based on correct working	2
• Progress towards	1

**Question 29 (c) (i)**

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

**Question 29 (c) (ii)**

Criteria	Marks
• Correct numerical expression	3
• Significant progress eg finding length of $EH$ or $GH$	2
• Some progress eg writing $x^2 + x^2 = 82^2$ or equivalent	1

**Question 29 (d) (i)**

Criteria	Marks
• Correct numerical expression	2
• Progress towards	1

**Question 29 (d) (ii)**

Criteria	Marks
• Correct numerical expression OR • Correct from previous answer	3
• Significant progress towards eg correct $n$ and $r$	2
• Progress towards eg correct $n$ or $r$	1

**Question 30 (a)**

Criteria	Marks
• Correct numerical expression	3
• Progress towards eg correct degrees and distance	2
• Progress towards eg correct degrees or correct distance	1

**Question 30 (b) (i)**

Criteria	Marks
• Correct answer	1

**Question 30 (b) (ii)**

Criteria	Marks
• Correct solution	1

**Question 30 (b) (iii)**

Criteria	Marks
• Correct answer OR • Correct numerical expression	1

**Question 30 (b) (iv)**

Criteria	Marks
• Correct answer	2
• Progress towards	1

**Question 30 (c) (i)**

Criteria	Marks
• Correct answer	1

**Question 30 (c) (ii)**

Criteria	Marks
• Correct answer	1

**Question 30 (c) (iii) (1)**

Criteria	Marks
• Correct explanation	1

**Question 30 (c) (iii) (2)**

Criteria	Marks
• Two estimates for $b$ that are less than 1.05 and making a correct conclusion	2
• Progress towards eg one value of $b$ less than 1.05	1

**Question 30 (iv)**

Criteria	Marks
• Correct calculation and conclusion	2
• Progress towards	1

# General Mathematics

## 2012 HSC Examination Mapping Grid

### Section I

Question	Marks	Content	Syllabus outcomes
1	1	DA3 Displaying single data sets DA4 Summary statistics	P2, P4
2	1	DA2 Data collection and sampling	P9
3	1	PB3 Multi-stage events	H4
4	1	M4 Right-angled triangles	P6
5	1	AM2 Modelling linear relationships	P5
6	1	M2 Applications of area and volume	P6
7	1	DA5 Interpreting sets of data	H4
8	1	AM1 Basic algebraic skills	P2, P3
9	1	FM2 Investing money	P2
10	1	M6 Applications of trigonometry	H6
11	1	DA7 Correlation	H4, H5
12	1	PB3 Multi-stage events	H10
13	1	AM2 Modelling linear relationships	P4, P5
14	1	AM1 Basic algebraic skills	P2
15	1	AM4 Modelling linear and non-linear relationships	H5
16	1	FM6 Depreciation	H5, H8
17	1	PB2 Relative frequency and probability	P4
18	1	FM1 Earning money	P2, P8
19	1	DA7 Correlation	H4, H5
20	1	M6 Applications of trigonometry	H6
21	1	AM3 Algebraic skills and techniques	H3
22	1	M5 Further applications of area and volume	H6, H7
23	1	FM5 Annuities and loan repayments	H8
24	1	FM4 Credit and borrowing	H8
25	1	M5 Further applications of area and volume	H6

**Section II**

Question	Marks	Content	Syllabus outcomes
26 (a) (i)	1	PB1 The language of chance	P10
26 (a) (ii)	1	PB2 Relative frequency and probability	P10
26 (b)	2	FM6 Depreciation	H5, H8
26 (c)	2	FM4 Credit and borrowing	H5, H8
26 (d) (i)	2	DA1 Statistics and society	P9
26 (d) (ii)	1	DA1 Statistics and society	P9
26 (e) (i)	1	DA3 Displaying single data sets PB2 Relative frequency and probability	P4, P10
26 (e) (ii)	1	PB2 Relative frequency and probability	P11
26 (f)	2	DA2 Data collection and sampling	P9
26 (g)	2	M1 Units of measurement	P2
27 (a)	3	FM1 Earning money	P2
27 (b)	2	M7 Spherical geometry	H6
27 (c) (i)	1	M3 Similarity of 2D figures	P6
27 (c) (ii)	1	M3 Similarity of 2D figures	P6
27 (d)	3	M4 Right-angled triangles	P2, P6
27 (e) (i)	2	PB3 Multi-stage events	H4, H10
27 (e) (ii)	1	PB3 Multi-stage events	H4, H10
27 (e) (iii)	2	PB3 Multi-stage events	H4, H10
28 (a)	2	M2 Applications of area and volume	P2
28 (b)	2	AM3 Algebraic skills and techniques	H2
28 (c)	3	M3 Similarity of 2D figures	P6
28 (d) (i)	1	DA5 Interpreting sets of data	H4, H5
28 (d) (ii)	3	DA5 Interpreting sets of data	H4
28 (e)	4	FM4 Credit and borrowing	H2, H11

Question	Marks	Content	Syllabus outcomes
29 (a) (i)	1	DA7 Correlation	H4, H5
29 (a) (ii)	1	DA7 Correlation	H4, H5
29 (a) (iii)	1	DA7 Correlation	H4, H5
29 (b)	2	DA6 The normal distribution	H4, H5
29 (c) (i)	2	M6 Applications of trigonometry	H6
29 (c) (ii)	3	M6 Applications of trigonometry	H6
29 (d) (i)	2	FM1 Earning money	P2
29 (d) (ii)	3	FM5 Annuities and loan repayments	H8
30 (a)	3	M7 Spherical geometry	H6
30 (b) (i)	1	AM4 Modelling linear and non-linear relationships	H3
30 (b) (ii)	1	AM4 Modelling linear and non-linear relationships	H3, H5
30 (b) (iii)	1	AM4 Modelling linear and non-linear relationships	H5
30 (b) (iv)	2	AM4 Modelling linear and non-linear relationships	H3, H5, H11
30 (c) (i)	1	AM4 Modelling linear and non-linear relationships	H3
30 (c) (ii)	1	AM4 Modelling linear and non-linear relationships	H3, H5
30 (c) (iii) (1)	1	AM4 Modelling linear and non-linear relationships	H5
30 (c) (iii) (2)	2	AM4 Modelling linear and non-linear relationships	H11
30 (c) (iv)	2	AM4 Modelling linear and non-linear relationships	H11