

# Year 12 General Mathematics

## Work rate calendar (WRC) 2024

## Term 1

All students are expected to participate in all online lessons and complete all assessment as outlined in this **Work rate calendar**.

Teachers may adjust topics, class work, assessment and submission dates. Adjustments will be communicated via QLearn or during lessons.

Assessment				
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.		
Non-supervised assessment		Students must sign declaration of academic integrity.		
Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	22 Jan – 26 Jan	Unit 3	Monday 22 January — Welcome calls for students: Prep – Year 12	Lesson materials provided
			Wednesday 24 January — Learning for success: Prep – Year 12	
			Friday 26 January — Australia Day Holiday	
			<b>Revision of Unit 3 from Term 4 2023</b>	
2	29 Jan – 2 Feb		<b>Topic 2: Time Series Analysis (Chapter 3)</b>	Exercises as per Unit 3 outline Quizzes 2B, 3D
			Lesson 1 Use a residual plot to assess the appropriateness of fitting a linear model	
			Lesson 2 Calculate seasonal indices Lesson 3 Deseasonalise time series data	
3	5 Feb – 9 Feb		Friday 9 February — Senior orientation day: Years 10–12	Exercises as per Unit 3 outline Quiz 3E
			Lesson 1 Fit a least-squares line to time series data Lesson 2 Solve practical problems	
4	12 Feb – 16 Feb		<b>Topic 3: Growth and decay in sequences (Chapter 4)</b>	Exercises as per Unit 3 outline Quizzes 4A, 4B, 4C, 4D
		Lesson 1 Recursion and terms of an arithmetic sequence		
		Lesson 2 Use the rule for the $n^{\text{th}}$ term, $t_n = a + (n - 1)d$ Lesson 3 Model and analyse practical situations		
5	19 Feb – 23 Feb	Lesson 1 Recursion and terms of a geometric sequence	Exercises as per Unit 3 outline Quizzes 4E, 4F, 4G	
		Lesson 2 Use the rule for the $n^{\text{th}}$ term, $t_n = ar^{(n-1)}$		
		Lesson 3 Model and analyse practical situations		
6	26 Feb – 1 Mar	<b>Topic 4: Earth Geometry and time zones (Chapter 5)</b>	Exercises as per Unit 3 outline Quizzes 5A, 5B	
		Lesson 1 Angle measurement and arc length		
		Lesson 2 Distance along a meridian Lesson 3 Distance along a parallel of latitude		
7	4 Mar – 8 Mar	Lesson 1 GMT, IDL and UTC. Link between longitude and time	Exercises as per Unit 3 outline Quizzes 5C	
		Lesson 2 Time zones, time differences and related travel East and West		
		Lesson 3 Aboriginal language groups and Indigenous seasonal time		
8	11 Mar – 15 Mar	<b>Revision for IA2</b>	<b>Chapter 6 Revision of Unit 3</b> Chapters 1 to 5	
		Lesson 1-3 Revision		
9	18 Mar – 22 Mar	<b>Revision and completion of IA2 Exam</b>	<b>IA2 Exam</b>  To be received at BrisbaneSDE by 5pm Friday 22 March	
		IA2 covers Unit 3 Topics 1, 2, 3 and 4.		
10	25 Mar – 29 Mar	Thursday 28 March — Cross country / Fun run: Prep – Year 12	Exercises as per Unit 4 outline Quizzes 7A, 7B, 7C, 7E	
		Friday 29 March — Good Friday		
		<b>Unit 4 Topic 1: Loans, investments, and annuities (Chapters 7, 8, &amp; 9)</b>		
		Lesson 1 Recurrence relation to model compound interest loan or investment Lesson 2 Solve problems on compound interest loans or investments		

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## Term 2

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Assessment				
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.		
Non-supervised assessment		Students must sign declaration of academic integrity.		
Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	15 Apr – 19 Apr	Unit 4	<b>Unit 4 Topic 1: Loans, investments, and annuities (Chapters 7, 8, &amp; 9)</b> Lesson 1 Effective interest rate Lesson 2 Recurrence relation to model a reducing balance loan Lesson 3 Reducing balance loan using annuities formulae	Exercises as per Unit 4 outline Quizzes 7D, 8A, 8B
2	22 Apr – 26 Apr		<b>Thursday 25 April — Anzac Day</b> Lesson 1 Recurrence relation to model an annuity Lesson 2 Repayment schedules to model an annuity	Exercises as per Unit 4 outline Quizzes 9A, 9B
3	29 Apr – 3 May		Lesson 1 Solve problems involving annuities formulae Lesson 2 Solve problems involving annuities formulae Lesson 3 Perpetuities	Exercises as per Unit 4 outline Quiz 9D
4	6 May – 10 May		<b>Monday 6 May — Labour Day</b> Lesson 1 Consolidate Finance – Which formula do I use? Lesson 2 Consolidate Finance – Which formula do I use?	Exercises as per Unit 4 outline
5	13 May – 17 May		<b>Topic 2: Graphs and networks (Chapter 10)</b> Lesson 1 Definitions of terms related to graphs and networks Lesson 2 Adjacency matrix. Communications and connections Lesson 3 Apply Euler's formula: $v + f - e = 2$	Exercises as per Unit 4 outline Quizzes 10A, 10B, 10C
6	20 May – 24 May		Lesson 1 The language of exploring graphs Lesson 2 The language of exploring graph Lesson 3 Definition of terms related to Eulerian graphs	Exercises as per Unit 4 outline Quizzes 10D, 10E
7	27 May – 31 May		Lesson 1 Hamiltonian and semi-Hamiltonian graphs Lesson 2 Consolidate Explorer graphs and applications Lesson 3 Shortest path in a weighted graph	Exercises as per Unit 4 outline Quizzes 10F, 10G
8	3 Jun – 7 Jun		<b>Topic 3: Networks and decision mathematics (Chapters 11 and 12)</b> Lesson 1 Definition of terms related to trees and spanning trees Lesson 2 Minimum spanning trees in a weighted graph Lesson 3 Solve minimal connector problems	Exercises as per Unit 4 outline Quizzes 11A
9	10 Jun – 14 Jun		Lesson 1 Precedence tables and activity networks Lesson 2 Critical paths using ESTs and LSTs Lesson 3 Minimum completion time and Float times	Exercises as per Unit 4 outline Quizzes 12A, 12B, 12C
10	17 Jun – 21 Jun		<b>Thursday 20 June — Senior formal: Year 12</b> <b>Friday 21 June — Athletics carnival / Sports day: Prep – Year 12</b> Lesson 1 Consolidate Term 2 – All topics - mixed	Exercises as per Unit 4 outline

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### Term 3

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Assessment				
Supervised assessment		Summative exams are to be supervised by the student's official exam supervisor.		
Non-supervised assessment		Students must sign declaration of academic integrity.		
Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	8 Jul – 12 Jul	Unit 4	<b>Topic 3: Networks and decision mathematics (Chapters 11 and 12)</b> Lesson 1 Maximum-flow minimum cut problems Lesson 2 Maximum-flow minimum cut problems Lesson 3 Bipartite graph to represent assignment/allocation problems	Exercises as per Unit 4 outline Quizzes 11C
2	15 Jul – 19 Jul		Lesson 1 – 3 Hungarian algorithm to determine optimum assignments	Exercises as per Unit 4 outline Quizzes 11B
3	22 Jul – 26 Jul		<b>Revision for IA3</b>	
4	29 Jul – 2 Aug		<b>Revision and completion of IA3 Exam</b> IA3 Exam covers Unit 4 Topics 1, 2 and 3	<b>IA3 Exam</b> To be received at BrisbaneSDE by 5pm Friday 2 August
5	5 Aug – 9 Aug	Units 3 & 4 Revision	<b>Structured Revision Program</b> Lessons 1 – 3	As per revision program
6	12 Aug – 16 Aug		<b>Wednesday 14 August — Royal Queensland (Ekka) Show Holiday</b> Lessons 1 – 3	As per revision program
7	19 Aug – 23 Aug		Lessons 1 – 3	As per revision program
8	26 Aug – 30 Aug		<b>Mock exams: Year 12</b> Monday 26 August – Thursday 29 August Friday 30 August — Student free day	As per revision program
9	2 Sept – 6 Sept		<b>Mock exams: Year 12</b> Monday 2 September – Friday 6 September	As per revision program
10	9 Sept – 13 Sept		Friday 13 September — Connect excursion: Years 10–12 <b>Structured Revision Program continues</b> Lessons 1 – 3	As per revision program

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## Term 4

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Assessment	
<b>Supervised assessment</b>	Summative exams are to be supervised by the student's official exam supervisor.
<b>Non-supervised assessment</b>	Students must sign declaration of academic integrity.

Week	Dates	Unit	Topic	Class work / Assessment to be submitted
1	30 Sept – 4 Oct	Units 1, 2, 3 and 4	<b>Structured Revision Program continues</b> Lessons 1 – 3	As per revision program
2	7 Oct – 11 Oct		Monday 7 October — King's Birthday Holiday Lessons 1 – 3	As per revision program
3	14 Oct – 18 Oct		Lessons 1 – 3	As per revision program
4	21 Oct – 25 Oct		<b>Exams: Year 12</b> Monday 21 October – Friday 25 October	
5	28 Oct – 1 Nov		<b>Exams: Year 12</b> Monday 28 October – Friday 1 November	
6	4 Nov – 8 Nov		<b>Exams: Year 12</b> Monday 4 November – Friday 8 November	
7	11 Nov – 15 Nov		<b>Exams: Year 12</b> Monday 11 November – Wednesday 13 November Thursday 14 November — Graduation: Year 12 Friday 15 November — Final day: Year 12	
8	18 Nov – 22 Nov			
9	25 Nov – 29 Nov			
10	2 Dec – 6 Dec			
11	9 Dec – 13 Dec			