

Varsity College
Year 10 Mathematical Methods – Semester 2, 2024

Term 3, 2024

Week	Date	Topics	Assessment
1	8-12 July Athletics Carnival Wed.	<ul style="list-style-type: none"> Expand binomial brackets, including using shortcuts for special cases Identify the key features of a parabola Factorise monic quadratics, both with and without a constant term 	
2	15-19 July	<ul style="list-style-type: none"> Use the Null Factor Law to determine solutions of a quadratic, and understand these as the x intercepts of the parabola Factorise and solve non-monic quadratic by: <ul style="list-style-type: none"> Factorising out a common factor first Decomposition method Factorise and solve the 'special case' quadratics, and identify the significance of the effect on the x intercepts <ul style="list-style-type: none"> Difference of two squares Perfect squares 	
3	22-26 July GC24 - Thursday	<ul style="list-style-type: none"> Recall the quadratic formula and use to solve quadratic equations Determine the discriminant and use it to determine the number of solutions that a quadratic will have. 	
4	29 Jul- 2 Aug	<ul style="list-style-type: none"> Use Completing the Square to solve quadratic equations Select the best solving method for any given question Apply quadratic techniques in contextual problems that involve the roots of quadratic equations and interpreting the solution in context. 	
5	5-9 August	<ul style="list-style-type: none"> Sketch a parabola from turning point form by identifying the turning point, and algebraically solving for the x-intercepts and y-intercept, and understand that this form is achieved through completing the square. Describe the transformations that have been achieved on the basic parabola $y = x^2$ to achieve parabolas of the form $y = a(x - h)^2 + k$ Sketch a parabola from standard form by determining the following algebraically: y-intercept; x-intercepts; axis of symmetry and turning point 	
6	12-16 August GC24 Finals – Wed.	<ul style="list-style-type: none"> Apply quadratic techniques in contextual problems that involve the maximum or minimum turning point of quadratic equations and interpreting the solution in context. 	
7	19-23 August	<ul style="list-style-type: none"> Model a quadratic equation if given <ul style="list-style-type: none"> Turning point and another point Two x-intercepts and another point Any three points Revision 	
8	26-30 August	<ul style="list-style-type: none"> Revision 	Exam Lesson 3
9	2-6 September	<ul style="list-style-type: none"> Quadratic Problem-Solving Activity – Desmos Multiplying and dividing algebraic fractions 	
10	9-13 September	<ul style="list-style-type: none"> Adding and subtracting algebraic fractions Solving equations involving algebraic fractions 	

School holidays: Saturday September 14 – Sunday September 29

Term 4, 2024

Week	Date	Topics	Assessment
1	30 Sept – 4 Oct	<ul style="list-style-type: none"> Review algebraic fractions Convert degrees to radians 	
2	7-11 October King's B'day PH - Monday	<ul style="list-style-type: none"> Convert radians to degrees Recall exact values for the sine, cosine and tangent of $0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ, 180^\circ, 270^\circ$ and 360° 	
3	14-18 October	<ul style="list-style-type: none"> Recall exact values for the sine, cosine and tangent of $0, \frac{\pi}{6}, \frac{\pi}{4}, \frac{\pi}{3}, \frac{\pi}{2}, \pi, \frac{3\pi}{2}$ and 2π Determine the exact value of trigonometric expressions in all four quadrants using degrees and radians. 	
4	21 - 25 October	<ul style="list-style-type: none"> Understand the shape of the sine and cosine graphs, and how these link to unit circle results. Convert between index notation and logarithmic notation Use log laws to simplify expressions 	
5	28 Oct – 1 Nov	<ul style="list-style-type: none"> Use log laws to simplify expressions Solve equations using logarithms and log laws Use logarithms to solve problems 	
6	4-8 November	<ul style="list-style-type: none"> Revision 	
7	11-15 November	<ul style="list-style-type: none"> Revision 	
8	18-22 November	EXAM BLOCK	EXAM
School holidays: Saturday November 23 – Monday January 27			