Curriculum Correlation

Unit 1 Transformations and Functions

Chapter 1 Function Transformations

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
2. Demonstrate an understanding of the effects of horizontal and vertical translations on the graphs of functions and their related equations. [C, CN, R, V]	1.1 Unit 1 Project	pp. 6–15, 56, 58–59, 158, 160–161 pp. 3, 157
3. Demonstrate an understanding of the effects of horizontal and vertical stretches on the graphs of functions and their related equations. [C, CN, R, V]	1.2 Unit 1 Project	pp. 16–31, 56, 58–59, 158, 160–161 pp. 3, 157
4. Apply translations and stretches to the graphs and equations of functions. [C, CN, R, V]	1.3 Unit 1 Project	pp. 32–43, 57–59, 158, 160–161 pp. 3, 43. 157
5. Demonstrate an understanding of the effects of reflections on the graphs of functions and their related equations, including reflections through the: • x-axis • y-axis • line $y = x$. [C, CN, R, V]	1.2, 1.4 Unit 1 Project	pp. 16–31, 44–59, 158, 160–161 pp. 3, 157
6. Demonstrate an understanding of inverses of relations. [C, CN, R, V]	1.4 Unit 1 Project	pp. 44–55, 57–59, 158, 160–161 pp. 3, 157

Chapter 2 Radical Functions

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
2. Demonstrate an understanding of the effects of horizontal and vertical translations on the graphs of functions and their related equations. [C, CN, R, V]	2.1 Unit 1 Project	pp. 62–77, 99, 102–103, 158–161 pp. 3, 157
3. Demonstrate an understanding of the effects of horizontal and vertical stretches on the graphs of functions and their related equations. [C, CN, R, V]	2.1 Unit 1 Project	pp. 62–77, 99, 102–103, 158–161 pp. 3, 157
4. Apply translations and stretches to the graphs and equations of functions. [C, CN, R, V]	2.1 Unit 1 Project	pp. 62–77, 99, 102–103, 158–161 pp. 3, 157
13. Graph and analyze radical functions (limited to functions involving one radical). [CN, R, T, V]	2.1–2.3 Unit 1 Project	pp. 62–103, 158–161 pp. 3, 89, 157

Chapter 3 Polynomial Functions

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
11. Demonstrate an understanding of factoring polynomials of degree greater than 2 (limited to polynomials of degree ≤ 5 with integral coefficients). [C, CN, ME]	3.2–3.3 Unit 1 Project	pp. 118–135, 153–156, 159–161 pp. 3, 157
12. Graph and analyze polynomial functions (limited to polynomial functions of degree ≤ 5). [C, CN, T, V]	3.1, 3.4 Unit 1 Project	pp. 106–117, 136–156, 159–161 pp. 3, 117, 157

Unit 2 Trigonometry

Chapter 4 Trigonometry and the Unit Circle

Strand/Outcome	Chapter/Section	Pages
Topic: Trigonometry		
General Outcome *Develop trigonometric reasoning.*		
Specific Outcomes		
1. Demonstrate an understanding of angles in standard position, expressed in degrees and radians. [CN, ME, R, V]	4.1 Unit 2 Project	pp. 166–179, 215, 218–219, 326, 328–329 pp. 163, 325
2. Develop and apply the equation of the unit circle. [CN, R, V]	4.2 Unit 2 Project	pp. 180–190, 215–216, 218–219, 326, 328–329 pp. 163, 325
3. Solve problems, using the six trigonometric ratios for angles expressed in radians and degrees. [ME, PS, R, T, V]	4.3 Unit 2 Project	pp. 191–205, 216–217, 219, 326, 328–329 pp. 163, 205, 325
5. Solve, algebraically, first and second degree trigonometric equations with the domain expressed in degrees and radians. [CN, PS, R, T, V]	4.4 Unit 2 Project	pp. 206–214, 217–219, 326, 328–329 pp. 163, 325

Chapter 5 Trigonometric Functions and Graphs

Strand/Outcome	Chapter/Section	Pages
Topic: Trigonometry		
General Outcome *Develop trigonometric reasoning.*		
Specific Outcomes		
4. Graph and analyze the trigonometric functions sine and cosine and tangent to solve problems. [CN, PS, T, V]	5.1–5.4 Unit 2 Project	pp. 222–287, 326–329 pp. 163, 281, 325
5. Solve, algebraically and graphically, first and second degree trigonometric equation with domain expressed in degrees and radians. [CN, PS, T, V]	5.4 Unit 2 Project	pp. 266–281, 284–287, 326–329 pp. 163, 281, 325

Chapter 6 Trigonometric Identities

Strand/Outcome	Chapter/Section	Pages
Topic: Trigonometry		
General Outcome *Develop trigonometric reasoning.*		
Specific Outcomes		
6. Prove trigonometric identities, using: • reciprocal identities • quotient identities • Pythagorean identities • sum or difference identities (restricted to sine, cosine and tangent) • double-angle identities (restricted to sine, cosine and tangent). [R, T, V]	6.1–6.3 Unit 2 Project	pp. 290–315, 322–324, 327–329 pp. 163, 308, 325
5. Solve, algebraically, first and second degree trigonometric equation with domain expressed in degrees and radians [CN, PS, T, V]	6.4 Unit 2 Project	pp. 316–324, 327–329 pp. 163, 325

Unit 3 Exponential and Logarithm Functions

Chapter 7 Exponential Functions

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
2. Demonstrate an understanding of the effects of horizontal and vertical translations on the graphs of functions and their related equations. [C, CN, R, V]	7.1 Unit 3 Project	pp. 334–345, 366, 368–369, 422, 424–425 pp. 331, 403, 421
3. Demonstrate an understanding of the effects of horizontal and vertical stretches on the graphs of functions and their related equations. [C, CN, R, V]	7.1 Unit 3 Project	pp. 334–345, 366, 368–369, 422, 424–425 pp. 331, 403, 421
4. Apply translations and stretches to the graphs and equations of functions. [C, CN, R, V]	7.1 Unit 3 Project	pp. 334–345, 366, 368–369, 422, 424–425 pp. 331, 403, 421
9. Graph and analyze exponential and logarithmic functions. [C, CN, T, V]	7.1–7.2 Unit 3 Project	pp. 334–357, 366–369, 422, 424–425 pp. 331, 357, 403, 421
10. Solve problems that involve exponential equations. [C, CN, PS, R]	7.3 Unit 3 Project	pp. 358–365, 367–369, 422, 424–425 pp. 331, 403, 421

Chapter 8 Logarithmic Functions

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
7. Demonstrate an understanding of logarithms. [CN, ME, R]	8.1, 8.2, 8.3, 8.4 Unit 3 Project	pp. 372–420, 422–425 pp. 331, 403, 421
8. Demonstrate an understanding of the product, quotient and power laws of logarithms. [C, CN, R, T]	8.3, 8.4 Unit 3 Project	pp. 392–420, 422–425 pp. 331, 403, 421
9. Graph and analyze exponential and logarithmic functions. [C, CN, T, V]	8.1, 8.2, 8.4 Unit 3 Project	pp. 372–391, 404–420, 422–425 pp. 331, 421
10. Solve problems that involve exponential and logarithmic equations. [C, CN, PS, R]	8.1, 8.2, 8.3, 8.4 Unit 3 Project	pp. 372–420, 422–425 pp. 331, 403, 421

Unit 4 Equations and Functions

Chapter 9 Rational Functions

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
14. Graph and analyze rational functions (limited to numerators and denominators that are monomials, binomials or trinomials). [CN, R, T, V]	9.1–9.3 Unit 4 Project	pp. 430–471, 550, 552–553 pp. 427, 456, 498, 545, 549

Chapter 10 Function Operations

Strand/Outcome	Chapter/Section	Pages
Topic: Relations and Functions		
General Outcome *Develop algebraic and graphical reasoning through the study of relations.*		
Specific Outcomes		
1. Demonstrate an understanding of operations on, and compositions of, functions. [CN, R, T, V]	10.1–10.3 Unit 4 Project	pp. 474–513, 550, 552–553 pp. 427, 456, 498, 545, 549

Chapter 11 Permutations, Combinations, and the Binomial Theorem

Strand/Outcome	Chapter/Section	Pages
Topic: Permutations, Combinations, and Binomial Theorem		
General Outcome *Develop algebraic and reasoning that involves combinatorics.*		
Specific Outcomes		
1. Apply the fundamental counting principle to solve problems. [C, PS, R, V]	11.1 Unit 4 Project	pp. 516–527, 546, 548, 551–553 pp. 427, 456, 498, 545, 549
2. Determine the number of permutations of n elements taken r at a time to solve problems. [C, PS, R, V]	11.1 Unit 4 Project	pp. 518–527, 546, 548, 551–553 pp. 427, 456, 498, 545, 549
3. Determine the number of combinations of n different elements taken r at a time to solve problems. [C, PS, R, V]	11.2 Unit 4 Project	pp. 528–536, 546–548, 551–553 pp. 427, 456, 498, 545, 549
4. Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers). [CN, R, V]	11.3 Unit 4 Project	pp. 537–545, 547–548, 551–553 pp. 427, 456, 498, 545, 549