

| Date | Topic(s) | In-class Activities | Assignments/Assessments |
|-----------------|---|---|---|
| Mon. July 1 | Sequences and Series: <i>Int. Algebra</i> Ch. 10 & 17 | Sequences: <ul style="list-style-type: none"> • Notation: recursive, explicit, arithmetic, geometric • Arithmetic, geometric, and other Series: <ul style="list-style-type: none"> • Finite series: arithmetic & geometric • Infinite series and limits: dividing by infinity • Convergence | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Complete pre-test <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 6-17 (as needed) ○ Book problems BP: <i>IA</i> 10.1, 10.4, 10.15, 10.20, 10.22, 10.26, 10.29d-f, 10.30, 10.32, 17.1 ○ Book problems AC: <i>IA</i> 10.5, 10.7, 10.11, 10.17, 10.34, 10.35, 17.3 ○ Report 1: Chapter 17 (due Wednesday) |
| Tue. July 2 | Linear Algebra and Matrices: <i>Precalculus</i> Ch. 10-12 | Intro to Matrices: <ul style="list-style-type: none"> • Linear combinations in two variables • Reduced row-echelon form on the calculator • Matrix multiplication and its applications • How to solve a linear system using matrices • Determinants Special Topics: <ul style="list-style-type: none"> • Planes in space • Transformation matrices and rotation matrices • Market share • Network matrices | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Quiz: Sequence Formulas ○ Test: Cumulative Sequences and Series <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 24-31 (as needed) ○ Book problems BP: <i>P</i> 10.1, 10.6, 10.9, 10.13, 10.15, 10.23, 10.26, 10.35, 10.36, 10.40, 11.15, 11.16 ○ Book problems AC: <i>P</i> 10.11, 10.21, 10.29, 10.30, 11.19 ○ Report 2: Special Topic in Matrices (due Monday) |
| Wed. July 3 | Transforming Functions— Operations and Symmetry: <i>Int. Algebra</i> Ch. 2 & 16 | Function Properties: <ul style="list-style-type: none"> • Domain and Range • Continuity • Graphical transformations on 12 basic functions • Building functions from functions • Piecewise functions • Step functions • Inverse functions and relations | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Quiz: Matrix Operations ○ Test: General Matrices <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 47-51 (as needed) ○ Book problems BP: <i>IA</i> 15.30, 16.1, 16.2, 16.3, 16.4, 16.14, 16.21, 2.5, 2.10, 2.12 ○ Book problems AC: <i>IA</i> 16.24, 16.25 |
| Thu.. July 4 | Functions— Compositions and Applications: <i>Int. Algebra</i> Ch. 2 & 15 | Game Day: <ul style="list-style-type: none"> • Dazau Dueling with inverses Function Composition: <ul style="list-style-type: none"> • Function composition (algebraic & graphical) • Sums and products of functions | <i>Assessments:</i> <ul style="list-style-type: none"> ○ No-Calc Quiz: Transformations ○ Quiz: Inverses <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: p. 57-59 ○ Book problems BP: <i>IA</i> 16.5, 2.20, 2.22 ○ Book problems AC: <i>IA</i> 16.11 |

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| Fri. July 5 | Polynomial and Rational Functions: <i>Int. Algebra</i> Ch. 7, 8, & 15 | Numerators & Denominators: <ul style="list-style-type: none"> • End-Behavior of $P(x)$ • Fundamental theorem of algebra • Factoring polynomials: real and complex roots • Multiplicity • Holes and asymptotes | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Quiz: Composition ○ Test: Cumulative Functions <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 53-66, 69-70 ○ Book problems BP: <i>IA</i> 15.2, 15.5, 8.7, 7.21 ○ Book problems AC: <i>IA</i> 15.3, 15.6, 8.12 ○ Report 2: Special Topic in Matrices (due Monday) |
| Mon. July 8 | Exponential and Logarithmic Functions: <i>Int. Algebra</i> Ch. 13 | Exponents & Logarithms: <ul style="list-style-type: none"> • Describing and graphing exponential functions • Compounding interest • Growth and decay • Describing and graphing logarithmic functions • Properties of logarithmic functions • Solving exponential and logarithmic equations Logistics: <ul style="list-style-type: none"> • Zombie Apocalypse!!! • Bell curves and logistics • Limits in bell curves and logistics | <i>Assessments:</i> <ul style="list-style-type: none"> ○ No-Calc Quiz: Asymptotes & End Behavior ○ Test: Rationals <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 71-78, 82-83 ○ Book problems BP: <i>IA</i> 13.3, 13.11, 13.37 ○ Book problems AC: <i>IA</i> 13.15 |
| Tue. July 9 | Unit 1 Midterm | Unit 1 Review | MIDTERM <i>Assignments:</i> <ul style="list-style-type: none"> ○ Study for SOHCAHTOA quiz: <ul style="list-style-type: none"> ▪ 30-60-90° and 45-45-90° triangles ▪ Find the sin, cos, and tan by hand ○ Study for radian quiz: <i>Precalc</i> 2.2 ○ Book problems BP: <i>P</i> 2.2, 2.9, 2.10, 2.11 (as needed) |
| Wed. July 10 | Trigonometric Functions: <i>Precalc</i> Ch. 2 | Basic Trig: <ul style="list-style-type: none"> • Right triangle trigonometry • Coordinate angles and the unit circle • Sign conventions (ACTS) • Inverse trig functions • The radian system and arc length Modeling periodic motion: <ul style="list-style-type: none"> ○ Writing functions to go with graphs ○ Writing functions to go with word problems: frequency, period, amplitude ○ Ball bounce experiment ○ Dynamic microphone experiment with voices and tuning forks | <i>Assessments:</i> <ul style="list-style-type: none"> ○ No-Calc Quiz: SOHCAHTOA ○ Radian Quiz <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 84-98 (as needed) ○ Book problems BP: <i>P</i> 2.5, 2.15, 2.17, 2.18, 2.21, 2.22, 2.28, 2.30, 2.34 ○ Book problems AC: <i>P</i> 2.19 (really cool!), 2.25, 2.26, 2.29, 2.32, 2.36 |

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| Thu. July 11 | Adding Vectors: <i>Precalc</i> Ch. 9 | <p>Vector Notation:</p> <ul style="list-style-type: none"> • Points, vectors, and maps: a graphical approach • Polar vs. rectangular coordinates • Compass directions, directionality and reference angles <p>Addition & Subtraction:</p> <ul style="list-style-type: none"> • Graphical • Component form • Unit vectors | <p><i>Assessments:</i></p> <ul style="list-style-type: none"> ○ No-Calc Quiz: Sines & Cosines ○ Test: Cumulative Algebra and Trig <p><i>Assignments:</i></p> <ul style="list-style-type: none"> ○ Course packet pages: 102-106 ○ The Great Vector Sheet: (due Mon.) <ul style="list-style-type: none"> ▪ Adding Vectors ▪ Subtracting Vectors ▪ Making Unit Vectors ▪ Dot product <ul style="list-style-type: none"> • Polar vs. rectangular • Test for perpendicular • Finding the angle between vectors • Projections ▪ Cross product <ul style="list-style-type: none"> • Polar vs. rectangular • The <i>ijk</i> map and the Right-Hand Rule • Test for parallel • The normal: finding perpendicular vectors • Area and volume |
| Fri. July 12 | Multiplying Vectors: <i>Precalc</i> Ch. 9, 12 | <p>Multiplication:</p> <ul style="list-style-type: none"> • Dot product (polar and rectangular) • Cross product (polar and rectangular) • Projections | <p><i>Assessments:</i></p> <ul style="list-style-type: none"> ○ Quiz: Components, Magnitude, & Direction <p><i>Assignments:</i></p> <ul style="list-style-type: none"> ○ Course packet pages: 107-112 ○ Book problems BP: <i>P</i> 9.7, 9.8, 9.10a, 9.24, 12.17 ○ Book problems AC: <i>P</i> 9.22 ○ Make trig identity sheet for Wednesday! <p><i>Consider starting Report 3 and/or Report 4!</i></p> |
| Mon. July 15 | Polar and Parametric: <i>Precalc</i> Ch. 5 | <p>Polar Coordinates:</p> <ul style="list-style-type: none"> • Polar graphing • Conic sections in polar form • Spirals, limaçons and rose curves <p>Parametric Functions:</p> <ul style="list-style-type: none"> • Parametric functions of <i>t</i>: rate, speed, and time • Vectors in parametric form • Collision problems | <p><i>Assessments:</i></p> <ul style="list-style-type: none"> ○ Quiz: Dot & Cross ○ Test: Cumulative Vectors <p><i>Assignments:</i></p> <ul style="list-style-type: none"> ○ Book Problems BP: <i>P</i> 5.2, 5.3, 5.7, 5.8, 5.9 (as needed) ○ Book problems AC: <i>P</i> 5.5, 5.13 (as needed) ○ Course packet pages: 113-127 (due Wed. as needed) ○ Report 3: Cool Shapes Exploration: (due Thursday) |
| Tue. July 16 | Analytic Geometry and Conic Sections: <i>Int. Algebra</i> Ch 5 | <p>Parametric Investigations:</p> <ul style="list-style-type: none"> • Parametric functions of θ • Eliminating the parameter • Speed & direction of travel <p>Conic Family Portraits:</p> <ul style="list-style-type: none"> • Flashlights & eccentricity • Major axes, minor axes, vertices, and foci • Rectangular vs. parametric coordinates • Intro to polar coordinates | <p><i>Assessments:</i></p> <ul style="list-style-type: none"> ○ Quiz: Polar Coordinates ○ Quiz: Parametric Speed and Time <p><i>Assignments:</i></p> <ul style="list-style-type: none"> ○ Report 4: Desmos graphing challenge ○ Course packet pages: 133-138 ○ Book Problems BP: <i>P</i> 5.7 ○ Book problems AC: <i>P</i> 5.11, 5.55 |

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| Wed. July 17 | Analytic Trigonometry: <i>Precalc</i> Ch. 3, 6-8 | Trig Identities: <ul style="list-style-type: none"> • Fundamental identities (symmetry, reciprocal, Pythagorean) • Proving identities • Sum and difference identities • Multiple-angle identities Complex Numbers: <ul style="list-style-type: none"> • Complex numbers, <i>cis</i>, and Argand diagrams: magnitude, direction, etc. • Multiplying and dividing complex numbers in rectangular and polar form • DeMoivre's Theorem: powers and roots of complex numbers | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Quiz: Parametric Conics ○ Test: Cumulative Conics <i>Assignments:</i> <ul style="list-style-type: none"> ○ Book Problems BP: P 3.2, 3.4, 3.6, 3.11, 3.22a ○ Book problems AC: P 3.12, 3.15, 3.19, 3.23 ○ Course packet pages: 153-156 ○ Course packet pages: 149-152 (as needed) |
| Thu. July 18 | Limits: <i>Course Packet</i> | Asymptotes & Limits: <ul style="list-style-type: none"> • 7 ways to evaluate a limit, including graphical and algebraic methods • Dividing by zero: vertical asymptotes and holes • Limits at infinity: horizontal asymptotes • Limits and continuity | <i>Assessments:</i> <ul style="list-style-type: none"> ○ Quiz: Trig Identities ○ Test: Trig Proofs <i>Assignments:</i> <ul style="list-style-type: none"> ○ Course packet pages: 166-189 (as needed) |
| Fri. July 19 | Review | <ul style="list-style-type: none"> • Limits questions | <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">FINAL EXAM</div> (including post-test) |