



Intro to Precalculus 9-12 Syllabus

Course Goals

1 Develop New Skills

Students develop their mathematical knowledge and abilities as they learn and practice new skills from their upcoming school year math course.

2 Review Prior Skills

Students gain confidence in their mathematical abilities through practice and supportive feedback.

3 Build Confidence

Students become more confident in their mathematics abilities as they learn and practice both old and new topics while having fun.

4 Make Connections

Students make connections between different mathematical topics, and between math and everyday situations that connect to the math they learn.

Course Topics

1 Polynomial Functions

Students will find the zeros of polynomial functions by factoring and graphing, identify their multiplicities, and find potential rational zeros using the rational root theorem.

2 Logarithmic and Exponential Functions

Students will expand and condense logarithmic expressions using logarithm properties and graph logarithmic and exponential functions.

3 Trigonometry (Right Triangle Trigonometry)

Students will calculate the sine, cosine, tangent, secant, cosecant, and tangent of an angle in a right triangle.

4 Trigonometry (Unit Circle)

Students will convert angle measures from degrees to radians and vice versa. Students will also find the sine, cosine, and tangent of special angles using the unit circle, and identify reference angles.

5 Trigonometry (Sine and Cosine Graphs)

Students will graph sine and cosine functions with vertical shifts, amplitude changes, and phase shifts.

6 Trigonometry (Identities)

Students will use the Pythagorean identities and fundamental trig identities to prove that two expressions are equal.

7 Trigonometry (Equations)

Students will solve simple trigonometric equations.

8 Matrices

Students will add, subtract, and multiply matrices.

9 Limits

Students will understand a limit and calculate the limits of continuous functions and functions with removable discontinuities.

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Updated on 6/8/2021