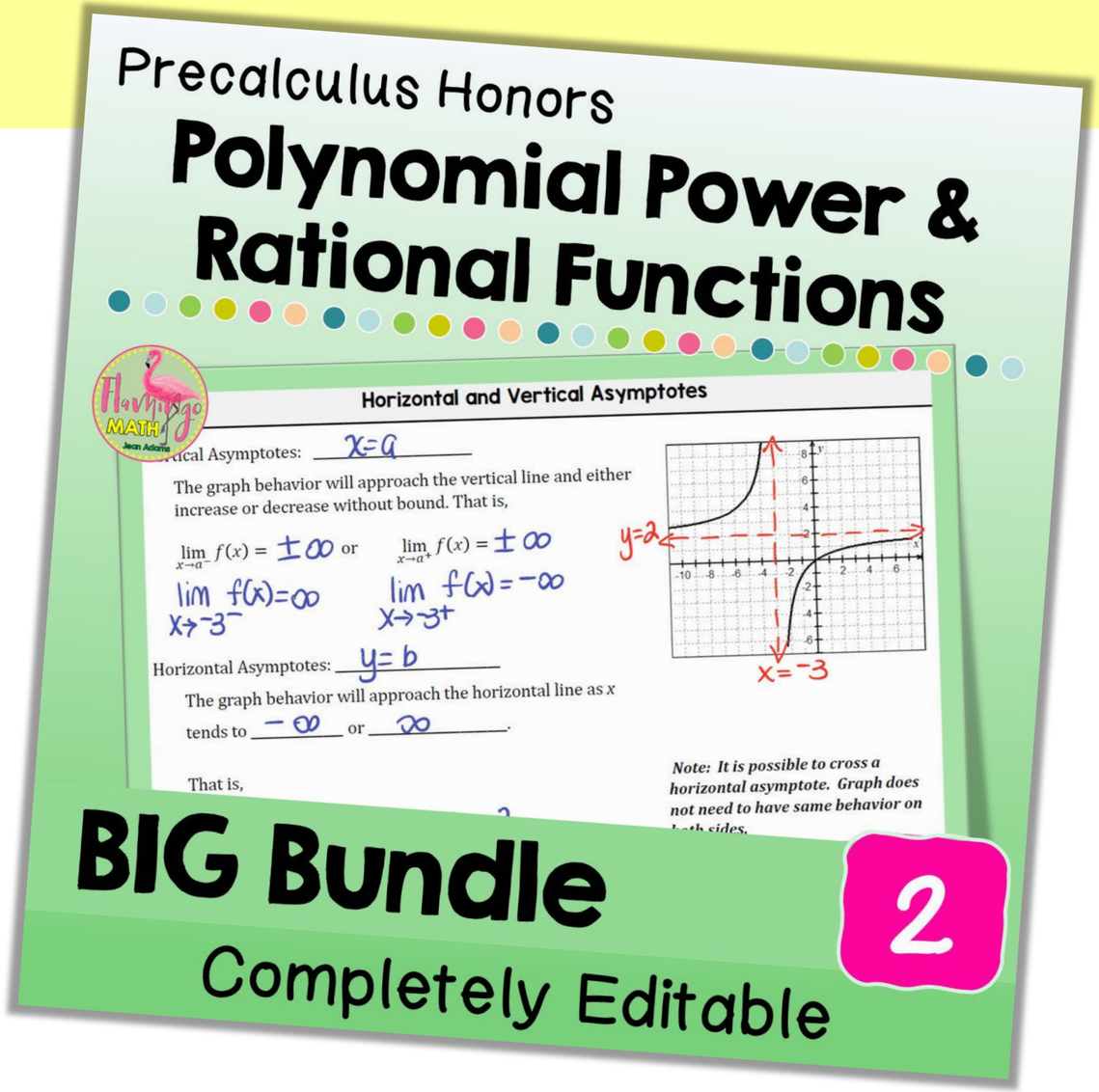
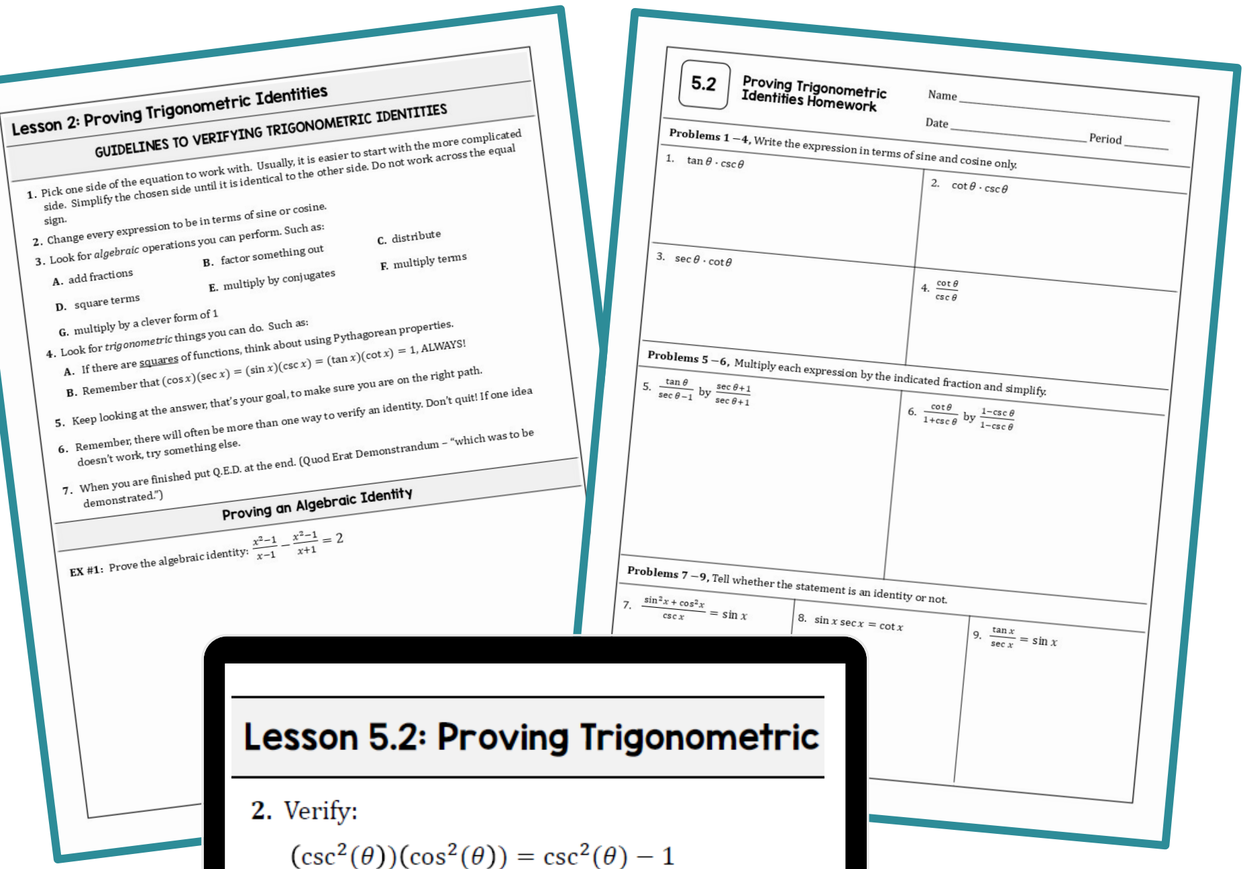
This is the Ultimate BIG Bundle for Analytic Trigonometry.

All new completely-editable bundle of notes, practice and more!

Take a look inside!



WHAT IS INCLUDED?



Lesson 2: Proving Trigonometric Identities

GUIDELINES TO VERIFYING TRIGONOMETRIC IDENTITIES

1. Pick one side of the equation to work with. Usually, it is easier to start with the more complicated side. Simplify the chosen side until it is identical to the other side. Do not work across the equal sign.
2. Change every expression to be in terms of sine or cosine.
3. Look for *algebraic* operations you can perform. Such as:
   - **A.** add fractions
   - **B.** factor something out
   - **C.** distribute
   - **D.** square terms
   - **E.** multiply by conjugates
   - **F.** multiply terms
   - **G.** multiply by a clever form of 1
4. Look for *trigonometric* things you can do. Such as:
   - **A.** If there are squares of functions, think about using Pythagorean properties.
   - **B.** Remember that $(\cos x)(\sec x) = (\sin x)(\csc x) = (\tan x)(\cot x) = 1$, ALWAYS!
5. Keep looking at the answer; that's your goal, to make sure you are on the right path.
6. Remember, there will often be more than one way to verify an identity. Don't quit! If one idea doesn't work, try something else.
7. When you are finished put Q.E.D. at the end. (Quod Erat Demonstrandum – "which was to be demonstrated.")

Proving an Algebraic Identity

EX #1: Prove the algebraic identity: $\frac{x^2-1}{x-1} - \frac{x^2-1}{x+1} = 2$

5.2 Proving Trigonometric Identities Homework

Name _____

Date _____ Period _____

Problems 1 – 4, Write the expression in terms of sine and cosine only.

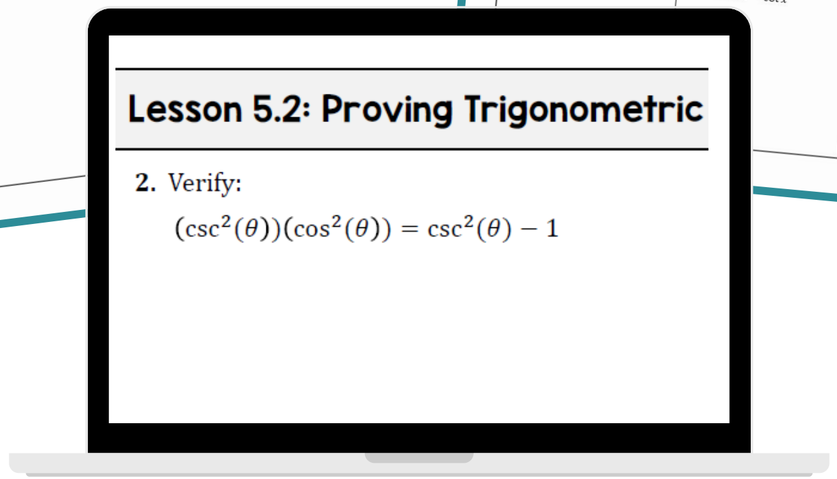
1. $\tan\theta \cdot \csc\theta$
2. $\cot\theta \cdot \csc\theta$
3. $\sec\theta \cdot \cot\theta$
4. $\frac{\cot\theta}{\csc\theta}$

Problems 5 – 6, Multiply each expression by the indicated fraction and simplify.

5. $\frac{\tan\theta}{\sec\theta-1}$ by $\frac{\sec\theta+1}{\sec\theta+1}$
6. $\frac{\cot\theta}{1+\csc\theta}$ by $\frac{1-\csc\theta}{1-\csc\theta}$

Problems 7 – 9, Tell whether the statement is an identity or not.

7. $\frac{\sin^2 x + \cos^2 x}{\csc x} = \sin x$
8. $\sin x \sec x = \cot x$
9. $\frac{\tan x}{\sec x} = \sin x$



Lesson 5.2: Proving Trigonometric

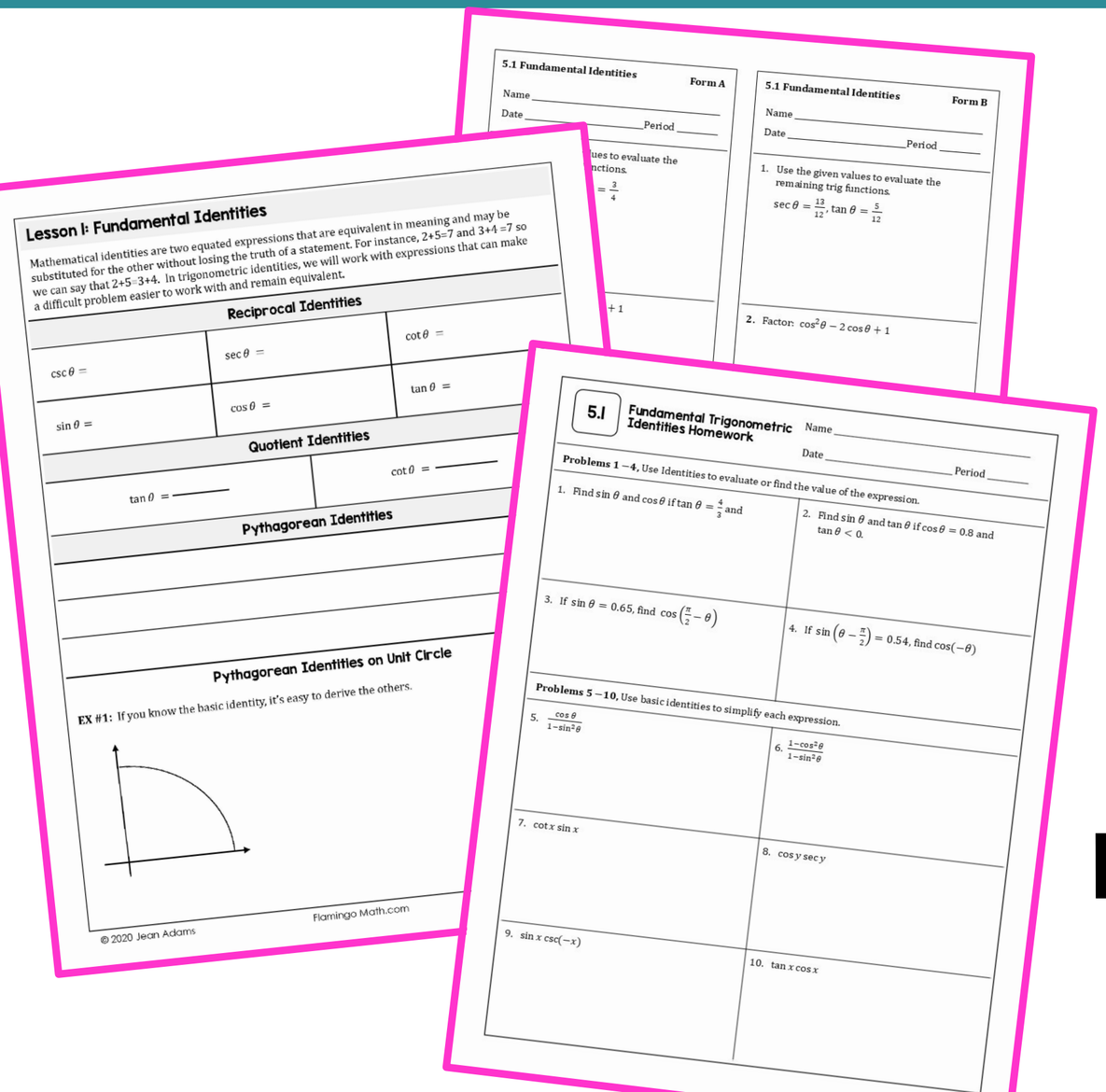
2. Verify:

$$(\csc^2(\theta))(\cos^2(\theta)) = \csc^2(\theta) - 1$$

- Editable Guided Student Notes, Practice sets, Daily Quizzes and Warm-Ups
- Google Slides for Presentation
- Video lessons
- Assessments & Review
- Full solution sets
- Scope, Sequence, Pacing

Flamingo Math by Jean Adams

Rigorous lessons and practice sets aligned to course standards is here.



- Where do you find extra time to write guided notes and practice sets?
- Is your class instruction aligned to the learning objectives and standards for the course?
- You need resources that will challenge your students to the necessary rigor for success.

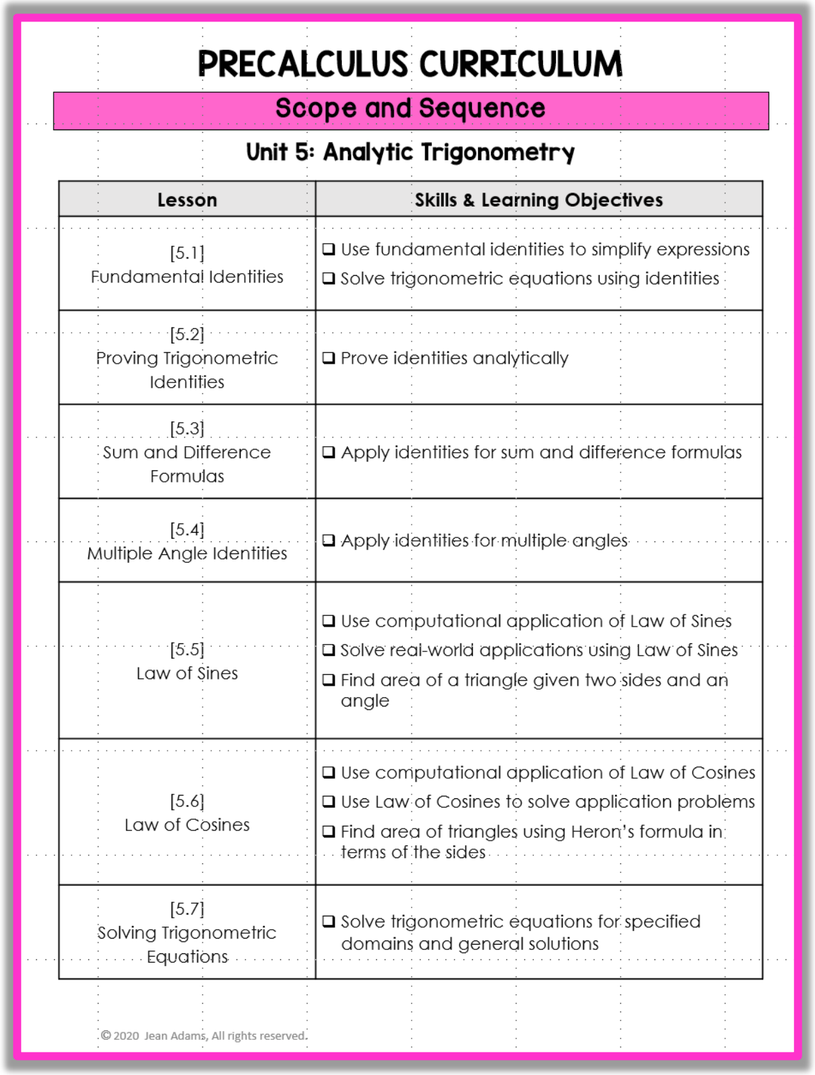
Flamingo Math will help bring balance into your teacher life!

Flamingo Math by Jean Adams

Cover the Standards

Each lesson will provide you and your students with the skills and learning objectives necessary for success in the Precalculus Honors Environment.

- ❑ You will find an editable scope and sequence document to track the learning objectives for the unit.
- ❑ Each lesson includes Google Slides for your presentation needs.
- ❑ You will also have a ***fully-editable version*** for every lesson, practice set, daily quiz warm up, and assessment.
- ❑ An editable pacing guide for both learning objectives and lesson plans is provided.



PRECALCULUS CURRICULUM

Scope and Sequence

Unit 5: Analytic Trigonometry

Lesson	Skills & Learning Objectives
[5.1] Fundamental Identities	❑ Use fundamental identities to simplify expressions ❑ Solve trigonometric equations using identities
[5.2] Proving Trigonometric Identities	❑ Prove identities analytically
[5.3] Sum and Difference Formulas	❑ Apply identities for sum and difference formulas
[5.4] Multiple Angle Identities	❑ Apply identities for multiple angles
[5.5] Law of Sines	❑ Use computational application of Law of Sines ❑ Solve real-world applications using Law of Sines ❑ Find area of a triangle given two sides and an angle
[5.6] Law of Cosines	❑ Use computational application of Law of Cosines ❑ Use Law of Cosines to solve application problems ❑ Find area of triangles using Heron's formula in terms of the sides
[5.7] Solving Trigonometric Equations	❑ Solve trigonometric equations for specified domains and general solutions

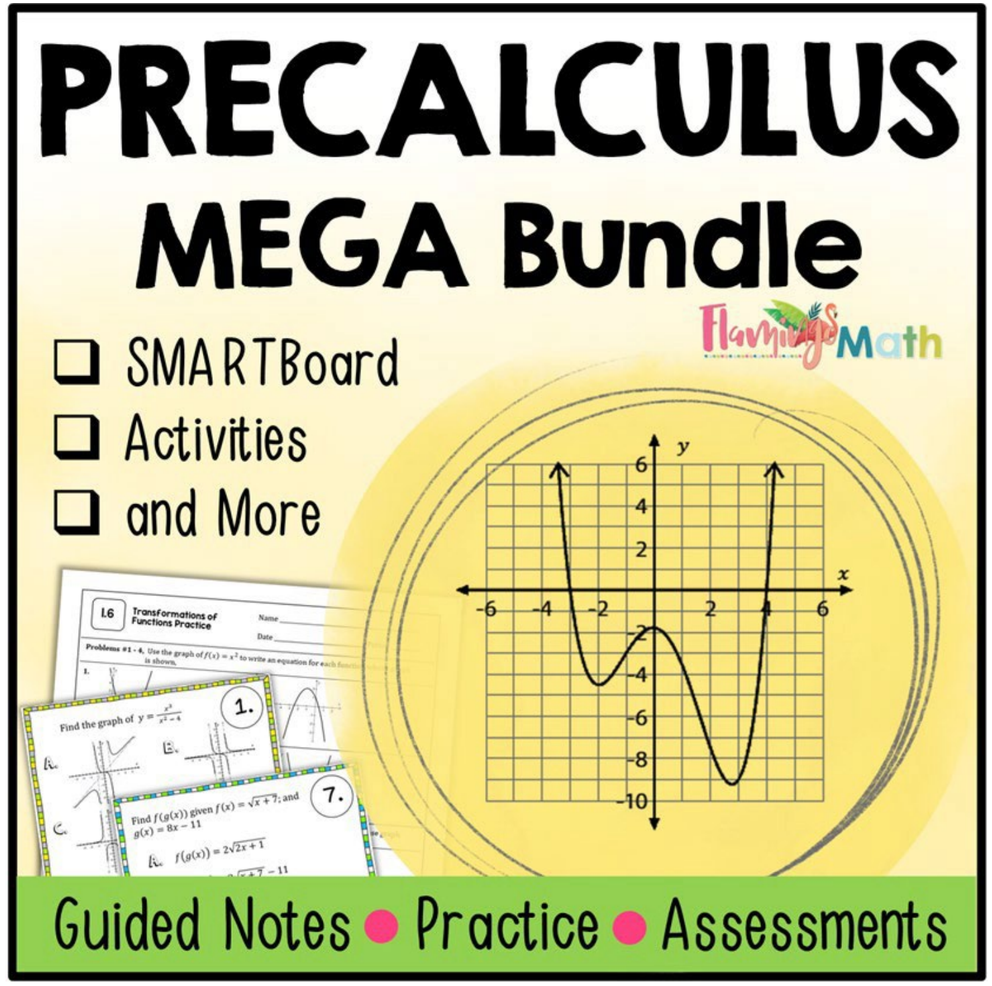
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Full Year Curriculum

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> "I have the AP Calculus curriculum, and it is awesome! I am so excited to use this for my Pre-Calculus classes! I know the students entering AP Calculus will be better prepared because of using this curriculum. Thank you very much! *Alicia B.*"



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