

Lesson 4.7 - Inverse Trigonometric Functions

OBJECTIVE

Relate the concept of inverse functions to trigonometric functions

KNOWLEDGE

- The corresponding domains (and ranges) of the inverse functions for sine, cosine & tangent

SKILLS

- Evaluate the inverses of trigonometric functions for given values of the domain
- Find inverse trig function values w/and w/out a calculator

Lesson 4.8 - Solving Problems w/Trigonometry

OBJECTIVE

Apply the concepts of right triangle trigonometry to solve real-world problems.

KNOWLEDGE

- Angles of elevation and depression
- Methods of solving right triangles

SKILLS

- Set up and solve application problems involving right triangles

Lesson 5.5 - Law of Sines

OBJECTIVE

Use the computational applications of the Law of Sines to solve a variety of problems

KNOWLEDGE & SKILLS

- Use the Law of Sines to solve oblique triangles
- Apply mathematical problem solving skills to model (and solve) a problem situation algebraically

Lesson 5.6 - Law of Cosines

OBJECTIVE

Apply the Law of Cosines to solve acute and obtuse triangles and determine the area of a triangle in terms of the measures of its sides and angles

KNOWLEDGE & SKILLS

- Use the Law of Cosines to solve oblique triangles
- Calculate the area of an oblique triangle using formulas involving trigonometric functions
- Apply mathematical problem solving skills to model (and solve) a problem situation algebraically

Lesson 5.1 - Fundamental Identities

OBJECTIVE

Use the fundamental identities to simplify trigonometric expressions and solve trigonometric equations.

VOCABULARY

- Complement
- Identity

KNOWLEDGE

- Fundamental trigonometric identities – reciprocal, quotient, odd-even, Pythagorean, cofunction

SKILLS

- Use the reciprocal, quotient, Pythagorean and other established identities to derive new identities
- Prove simple trigonometric identities
- Use the relationship between cofunctions
- Use the odd-even identities
- Use inverse functions to solve trigonometric equations

Lesson 5.2 - Proving Trigonometric Identities

OBJECTIVE

Decide whether an equation is an identity; confirm identities analytically

KNOWLEDGE

- Fundamental trigonometric identities
- Strategies for proving identities

SKILLS

- Determine or confirm whether a trigonometric equation is an identity
- Use algebraic techniques to prove new identities

Lesson 5.3 - Sum & Difference Identities

OBJECTIVE

Apply the identities for the sine, cosine, and tangent of a sum or a difference

KNOWLEDGE

- Sum & difference identities for sine, cosine & tangent
- Strategies for proving identities

SKILLS

- Use sum and difference identities to evaluate trig functions of angles
- Use fundamental trigonometric identities and algebraic techniques to prove new identities

Lesson 5.4 - Multiple-Angle Identities

OBJECTIVE

Apply the double-angle, power-reducing, and half-angle identities

KNOWLEDGE

- Double- and half-angle identities for sine, cosine & tangent

SKILLS

- Use the half-angle identities to evaluate trigonometric functions of angles
- Use fundamental trigonometric identities and algebraic techniques to prove new identities
- Solve trigonometric equations (involving trigonometric expressions of a single angle or multiple angles) using algebraic techniques and trig identities
- Prove identities using sum and difference identities