

Lesson 4.1 - Angles & Their Measures

OBJECTIVE**VOCABULARY**

- Angular speed
- Arc length
- Linear speed
- Radian

KNOWLEDGE

- D°M'S" & degree – radian conversions
- Arc length formula
- Area of a sector
- Angular vs. linear speed

SKILLS

- Use degree measures of angles including decimals as well as minutes & seconds
- Use radian measures of angles; convert between radian & degree measure
- Use the concepts of arc length & area of a sector
- Use the concepts of (and convert between) linear & angular velocity (speed)

LESSON SUMMARY:

Lesson 4.2 - Trigonometric Functions of Acute Angles

OBJECTIVE**VOCABULARY**

- "Solving a triangle"
- Standard position

KNOWLEDGE

- The six trig functions: sine, cosine, tangent, cosecant, secant & cotangent
- The two special right triangles & their side ratios
- Right triangle trigonometry

SKILLS

- Identify exact values of trigonometric functions (given one trig ratio)
- Solve problems involving special right triangles
- Solve right triangles using trigonometric functions

LESSON SUMMARY:

Lesson 4.3 - Trigonometry Extended: The Circular Functions

OBJECTIVE

VOCABULARY

- Circular functions
- Coterminal angles
- Initial side
- Quadrantal angles
- Reference angle
- Reference triangle
- Standard position
- Terminal side
- Unit circle
- Vertex

KNOWLEDGE

- The trigonometric functions of any angle – given $P(x, y)$
- Exact values of the six trig functions of quadrantal angles
- Trigonometric functions of real numbers

SKILLS

- Find coterminal angles in radians or degrees
- Find trigonometric functions defined by using a point on the terminal side of an angle
- Evaluate exact values of trigonometric functions

LESSON SUMMARY:

Lesson 4.4 - Graphs of Sine & Cosine: Sinusoids

OBJECTIVE

VOCABULARY

- Amplitude
- Frequency
- Period
- Phase shift
- Sinusoid

KNOWLEDGE

- Sine: its graph & properties
- Cosine: its graph & properties
- Sinusoids & transformations

SKILLS

- Use the concepts of amplitude, period and phase shift related to the graphs of trigonometric functions
- Analyze the properties of sine & cosine functions (maximum & minimum values & zeros)
- Identify transformations made to the graphs of sine and cosine
- Graph trigonometric functions w/ variations in amplitude, period and shifts
- Find the equation of a sinusoid with a given amplitude, period and point

LESSON SUMMARY:

Lesson 4.5 - Graphs of Tangent, Cotangent, Secant & Cosecant

OBJECTIVE

KNOWLEDGE

- Tangent, cotangent, secant & cosecant: their graphs & properties
- Transformations of the graphs of tangent, cotangent, secant & cosecant

SKILLS

- Identify undefined values and find exact (and approximate) values for each basic trigonometric function
- Locate asymptotes of tangent, cotangent, secant & cosecant
- Identify transformations made to the graphs of tangent, cotangent, secant & cosecant
- Sketch the graphs of basic trigonometric functions accurately

LESSON SUMMARY:

Lesson 4.7 - Inverse Trigonometric Functions

OBJECTIVE

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 SUMMARY:

CHAPTER 4 – VOCABULARY

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| AMPLITUDE | |
| ANGULAR SPEED | |
| ARC LENGTH | |
| CIRCULAR FUNCTIONS | |
| COTERMINAL ANGLES | |
| FREQUENCY | |
| INITIAL SIDE | |
| LINEAR SPEED | |
| PERIOD | |
| PHASE SHIFT | |
| QUADRANTAL ANGLES | |
| RADIAN | |
| REFERENCE ANGLE | |
| REFERENCE TRIANGLE | |
| SINUSOID | |
| SOLVING A TRIANGLE | |
| STANDARD POSITION | |
| TERMINAL SIDE | |
| UNIT CIRCLE | |
| VERTEX | |