Trigonometric Functions & Equations

Curriculum Expectations

By the end of this course, students will:

- recognize the radian as an angle measurement, define the radian measure of an angle, and develop and apply the relationship between radian and degree measure
- represent radians in terms of π and as rational numbers
- determine the primary trigonometric ratios and the reciprocal trigonometric ratios of angles expressed in radians
- determine the exact values of the primary trigonometric ratios for special angles less than or equal to 2π
- sketch the graphs of sine and cosine for angle measures expressed in radians, and determine and describe some key properties in terms of radians
- make connections between the tangent ratio/tangent function, and describe properties of the tangent function
- graph the reciprocal trigonometric functions for angle measures expressed in radians, determine and describe key properties of the reciprocal functions, and recognize notations used to represent the reciprocal functions
- determine the amplitude, period, and phase shift of sinusoidal functions, with angles expressed in radians
- sketch graphs sinusoidal functions by applying transformations, with angles expressed in radians, and state the period, amplitude, and phase shift of the transformed functions
- represent sinusoidal functions with equations, given their graphs or properties, with angles expressed in radians
- pose problems based on applications involving trigonometric functions with domains expressed in radians, and solve these and other such problems by using a given graph or an equation
- solve linear and quadratic trigonometric equations for the domain of real values from 0 to 2π

Schedule of Topics

Day	Topic	Reading	Homework	Questions?
1	Radian Measure	§4.1	p.208 #1-11,13-17	
2	Trigonometric Ratios and Special Angles	§4.2	Worksheet	
3		None	p.217 #9-14,16-18,20	
4	Graphs of Primary Trigonometric Functions	§5.1	p.258 #1-11	
5	Graphs of Secondary Trigonometric Functions	§5.2	p.267 #7,9,10,15,16	
6	Transformations of Sinusoidal Functions	§5.3	p.275 #1-6,8-14	
7	Solving Trigonometric Equations	§5.4	p.287 #1,3,5,7,9-12	
8		None	p.288 #16-20, Worksheet	
9	Applications of Trigonometric Functions	None	Worksheet	
10	Rates of Change of Trigonometric Functions	§5.5	p.296 #3,6,7,10	
11	Unit Review	None	p.244 #1-9, p.300 #1-13	

Assessment and Evaluation

Quiz/Test/Task	Date	K	A	T	C

Skills Checklist

At the end of this strand, I am able to:

• express the measure of an angle using radians	[ ] Always	[ ] Often	[ ] Seldom
• convert between degree and radian measure	[ ] Always	[ ] Often	[ ] Seldom
• solve problems involving radian measure (e.g. arc length)	[ ] Always	[ ] Often	[ ] Seldom
• express special angles using radian measure	[ ] Always	[ ] Often	[ ] Seldom
• determine trigonometric ratios given a radian measure	[ ] Always	[ ] Often	[ ] Seldom
• graph the sine, cosine and tangent functions using radians	[ ] Always	[ ] Often	[ ] Seldom
• identify key features of the primary trigonometric functions	[ ] Always	[ ] Often	[ ] Seldom
• graph the secant, cosecant and cotangent functions using radians	[ ] Always	[ ] Often	[ ] Seldom
• identify key features of the secondary trigonometric functions	[ ] Always	[ ] Often	[ ] Seldom
• make connections between primary and secondary trig. functions	[ ] Always	[ ] Often	[ ] Seldom
• apply transformations to trig. functions expressed in radians	[ ] Always	[ ] Often	[ ] Seldom
• identify key properties of transformed trig. functions	[ ] Always	[ ] Often	[ ] Seldom
• solve trigonometric equations using primary/secondary ratios	[ ] Always	[ ] Often	[ ] Seldom
• solve trigonometric equations by factoring first	[ ] Always	[ ] Often	[ ] Seldom
• model problems using trigonometric equations	[ ] Always	[ ] Often	[ ] Seldom
• solve problems involving trigonometric equations	[ ] Always	[ ] Often	[ ] Seldom

Student Comments

Parent/Guardian Comments

Teacher Comments