



Correlation of

Trigonometry, 11/E, by Ron Larson, ©2022, ISBN: 9780357645697

to

Oklahoma Academic Standards for Mathematics Precalculus (PC) (2022)

Table of Contents:

<u>Functions (F)</u> <u>Conic Sections (CS)</u> <u>Trigonometry (T)</u>

OAS-M for Mathematics Precalculus (PC) (2022)	Trigonometry	
Functions (F)		
PC.F.1 Analyze functions and relations.		
PC.F.1.1 Interpret characteristics of a function defined by an expression in the context of the situation.	pages 32-33 (entire page) page 38 (problems 55-72)	
PC.F.1.2 Sketch the graph of a function that models a relationship between two quantities, identifying key features.	pages 79-82 (all pages) pages 83-84 (problems 11-50, 53-56) page 34 (Example 10 and 11) page 38 (problems 73-88) page 116 (problems 105-112) page 117 (problems 17-22) page 120 (problem 11)	
PC.F.1.3 Interpret characteristics of graphs and tables for a function that models a relationship between two quantities in terms of the quantities.	pages 70-73 (all pages) pages 75-76 (problems 33-82) page 65 (problem 65) page 66 (problems 93-97)	
PC.F.1.4 Describe end behavior, asymptotic behavior, and points of discontinuity.	page 170 (tangent function) page 172 (cotangent function) page 445	
PC.F.1.5 Determine if a function has an inverse. Algebraically and graphically find the inverse or define any restrictions on the domain that meet the requirement for invertibility, and find the inverse on the restricted domain.	pages 102-104 (all pages) pages 106-107 (all pages) pages 108-110	
PC.F.2 Build functions to model and validate relationships among functions.		
PC.F.2.1 Model relationships through composition, and attend to the restrictions of the domain.	pages 96-98	
PC.F.2.2 Rewrite a function as a composition of functions.	pages 96-98 (all pages) pages 99-101 page 116 page 117 (problems 23-24) page 119 page 120 (problem 12, 13)	
PC.F.2.3 Interpret the meanings of quantities involving functions and their inverses.	pages 102-106 pages 180-182	

DC E 2.4 Varify by analytical matheda that ana		
FO.F.2.4 Verify by analytical methods that one function is the inverse of epother	pages 106-107 (all pages)	
	page 116 (problems 129-130)	
PC E 3 Predict and verify solutions involving function		
PC.F.3.1 Predict solutions involving functions that are	page 37 (problems 47-50)	
quadratic, polynomial of higher order, rational,		
exponential, and logarithmic.		
PC.F.3.2 Graphically verify solutions involving	page 31 (entire page)	
functions that are quadratic, polynomial of higher	page 37	
order, rational, exponential, and logarithmic.	page 38 (problem 105)	
	page 74 (problems 27-32)	
	page 114 (problems 51-54)	
PC.F.3.3 Algebraically verify solutions involving	page 57 (entire page)	
functions that are quadratic, polynomial of higher	page 59-60 (starting at example 9)	
order, rational, exponential, and logarithmic.	page 63 (problems 55-57)	
	page 09 (entite page) page 74 (problems $15-26$)	
	page 114 (problems $35-46$)	
Conic Sections (CS)		
PC.CS.1 Investigate conic sections.		
PC.CS.1.1 Model real-world situations which involve	This standard is not addressed in this text.	
PC.CS.1.2 Identify key features of conic sections (foci,	This standard is not addressed in this text.	
directrix, radii, axes, asymptotes, center) graphically		
and algebraically.		
DC CS 1.2 Skotch a graph of a papia caption using its	This standard is not addressed in this taxt	
key features		
PC.CS.1.4 Write the equation of a conic section given	This standard is not addressed in this text.	
its key features.		
PC CS 1.5 Given the equation $ar^2 + hv^2 + cr + dv + a$	This standard is not addressed in this text	
= 0 determine if the equation represents a circle		
ellipse, parabola, or hyperbola.		
Trigonometry (T)		
PC.T.1 Make sense of the unit circle and its relationship to the graphs of trigonometric functions.		
PC T 1 1 Draw and recognize angles in standard	pages 123-124 (all pages)	
position using radian measure and determine the	page 129	
quadrant of the terminal side	page 131 (problem 74)	
	page 202 (problems 1-12)	
	page 203 (problems 50-56)	
	page 200 (problems 00-00)	

PC.T.1.2 Convert radian measure to degree measure and vice-versa.	page 125 (all pages) page 130 (problems 31-50)
PC.T.1.3 Find the length of an arc and the area of a sector on a circle.	pages 126-128 (all pages) pages 130-131 (problems 51-68) page 202 (problems 13-16)
PC.T.1.4 Use special triangles to determine geometrically the values of sine, cosine, tangent for $\frac{\pi}{3}$, $\frac{\pi}{4}$, and $\frac{\pi}{6}$, and use the unit circle to express the values of sine, cosine, and tangent for $\pi - x$, $\pi + x$, and 2π - x in terms of their values for x , where x is any real number.	pages 132-138 (all pages and problems 5-54) pages 140-142 (start at example 2) pages 146-147 (problems 23-26, 35, 36, 51-60) page 202 (problems 21-26)
PC.T.1.5 Use reference angles to determine the terminal point $P(x, y)$ on the unit circle for a given angle.	pages 150-155 (all pages) pages 156-157 page 202 (problems 17-20) page 202
PC.T.1.6 Estimate trigonometric values of any angle.	pages 144-145 (all pages) pages 146-148 (problems 5-22, 27-34) pages 139-140 (stop at example 2) pages 190-195 (all pages) pages 196-199 (problems 5-57) pages 202-203 (problems 37-48, 57-60) page 204 (problems 93-96)
PC.T.1.7 Apply the properties of a unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	This standard is not addressed in this text.
PC.T.1.8 Graph of all six trigonometric functions, identifying key features.	pages 159 - 165 (all pages) pages 170 - 176 (all pages) pages 166 - 169 (problems 5 - 86) pages 177 - 179 (problems 7 - 82) page 203 (problems 61-76)
PC.T.1.9 Describe and analyze the relationships of the properties of a unit circle.	This standard is not addressed in this text.
PC.T.2 Apply trigonometric concepts beyond the right triangle.	
PC.T.2.1 Create models for situations involving trigonometry.	This standard is not addressed in this text.
PC.T.2.2 Apply the Law of Sines and Law of Cosines to solve problems.	pages 262-265, 267 (all pages) pages 271-273 (all pages) pages 268–270 (problems 5-36, 45-60) pages 275–277 (problems 5-36, 45-58, 59-64) pages 302-303 (problems 1-12, 19-30, 37-40) page 305 (problems 1-8) page 311
PC.T.2.3 Use trigonometry to find the area of triangles.	page 266 page 268 (problems 37-44)

	page 274 pages 276-277 (problems 37-44, 59)
	pages 302-303 (problems 13-18)
PC.T.2.4 Use inverse functions to solve trigonometric equations; evaluate the solution and interpret them in terms of context	pages 180 - 185 (all pages) pages 186 - 188 (problems 7 - 130) pages 203
PC.T.3 Verify trigonometric identities and solve equ	ations.
PC.T.3.1 Algebraically manipulate the structure of a trigonometric expression to identify ways to rewrite it.	pages 142-144 (all pages) pages 210-214 (all pages) pages 236-238 (all pages) page 147 (problems 37-50) pages 215-216 pages 240-241 (problems 5-82) page 254 (problems 1-18*) pages 256 ([problems 1-4)
PC.T.3.2 Choose and produce an equivalent form of an expression to explain the properties of the quantity represented by the expression.	pages 217-221 (all pages) page 244-246 (stopping at example 6) pages 247-248 (stopping at example 9) pages 222-223 pages 250-251 (problems 47-58, 63-66, 69-72) pages 254-255 page 256 pages 257-258
PC.T.3.3 Graphically and algebraically verify solutions to trigonometric equations.	pages 224-231 (all pages) page 246 (example 6) pages 248-249 (starting at example 9) pages 232-235 page 239 pages 242 page 243 pages 250-251 (problems 5-12, 43-46, 59-62, 67-68) pages 254-255 page 256 (problems 13-17, 20-21) pages 257-258 (problems 4, 5, 6, 7)
PC.T.4 Explore complex numbers.	
PC.T.4.1 Use the relation $i^2 = -1$ and the	pages 314-320
mathematical properties to add, subtract, and	page 338 page 341
multiply complex numbers.	
PC.T.4.2 Find the conjugate of a complex number in rectangular forms and quotients of complex numbers.	p.339* p. 341
PC.T.4.3 Solve quadratic equations in one variable that have complex solutions.	pages 321-328