Math 12 Pre-Calculus LG 7

ANGLES AND TRIG EQUATIONS

INTRODUCTION:

Repeating patterns occur all around us. Check out pages 164-165.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:

1) Sketch angles in standard position in radians and degrees.
2) Convert between radians and degrees.
3) Determine coterminal angles.
4) Understand the relationship between arc length, radius and central angle of a circle.
5) Understand the concept of the unit circle.
6) Determine the exact and approximate values of trig ratios.
7) Determine the angles given the trig ratio.
8) Solve first and second degree trig equations.

EVALUATION:

Write the LG 7 assessment quiz in the test centre.

RESOURCES NEEDED:

Math 12 Pre-Calc Text

THSS Math 12 Pre-Calc Learning Guides.

www.thssmath.com

LEARNING ACTIVITIES:

Expectation #1: Sketch angles in standard position in radians and degrees.

Expectation #2: Convert between radians and degrees.

Expectation #3: Determine coterminal angles.

Expectation #4: Understand the relationship between arc length, radius and central angle of a circle.

1. Watch and take notes on instructional video on Radians and Angles in Standard Position.

2. In the textbook, Read Link the Ideas on page 167.

3. Work through Example 1 on page 168 and complete the "Your Turn" questions on page 169.

4. In your math journal, describe using an example, how to convert between degrees and radians.

5. Read Coterminal Angles on page 170. Work through Example 2 on pages 170-171 and complete the Your Turn questions. Read Coterminal Angles in General Form on page 171. Work through Example 3 on page 172 and complete the Your Turn questions.

6. In your math journal, describe using an example, how to find coterminal angles. Include how to express coterminal angles in standard position.

7. Read Arc Length of a Circle on page 173. Work through Example 4 on pages 173-174 and complete the Your Turn questions.

8. Read Key Ideas on page 175. In your journal, using an example, determine how to find the arc length of a circle when you know the radius and the central angle.

8. In the textbook, complete pages 175 - 179 #1 – 9, 11 – 14, 16, 20.

Expectation #5: Understand the concept of the unit circle.

Expectation #6: Determine the exact and approximate values of trig ratios.

Expectation #7: Determine the angles given the trig ratio.

1. Watch and take notes on instructional video on Trig Ratios and Angles.

2. Read Link the Ideas on page 192 and Reciprocal Trigonometric Ratios on page 193.

3. Work through Example 1 on pages 193 – 194 and complete the corresponding Your Turn question.

4. Read Exact Values of Trigonometric Ratios on page 194.

5. Work through Example 2 pn pages 194-195 and complete the Your Turn questions.

6. Read Approximate Values of Trigonometric Ratios on Page 196.

7. Work through Example 3 on page 196 – 197 and complete the Your Turn questions.

8. Read Approximate Values of Angles on page 197.

9. Work through Examples 4 and 5 on pages 198 – 200 and complete the corresponding Your Turn questions.


10. Read Key Ideas on page 201. In your journal, describe how the reciprocal trig functions relate to $\sin\ \theta,\ \cos\ \theta, and\ \tan\ \theta$. Also, include the 2 special triangles which give you the exact trig ratios for $0, \frac{\pi}{6}, \frac{\pi}{4}, \frac{\pi}{3}, and\ \frac{\pi}{2}$.


11. In the textbook, complete pages 201 - 205 #1(not g,h), 2, 3, 6-9, 10(not d), 11, 12, 15.


Expectation #8: Solve first and second degree trig equations.


1. Watch and take notes on instructional video on Solving Trig Equations.


2. Complete Investigate Trigonometric Equations on pages 206-207.
3. Read Link the Ideas on page 207. Work through Examples 1-3 on pages 207-210 and complete the corresponding Your Turn questions.


3. Read Key Ideas on page 211. In your journal, describe, using an example, how to solve linear and quadratic trig equations.


5. In the textbook, complete pages 211 – 214 #1-5, 7, 9 – 12, 16, 18 – 20.

REVIEW AND CHALLENGE


1. In the textbook, complete Chapter 4 Review pages 215 – 217 #1 – 23.
2. Complete Chapter 4 Practice Test pages 218 – 219 #1 – 16.

Key Terms: radian, coterminal angles, reference angles, general form, unit circle, cosecant, secant, cotangent, trigonometric equation.

PRACTICE QUIZZES

Practice quiz #1
Practice quiz #2
Practice quiz #3
Practice quiz #4