UNIT ONE

I. Find two coterminal angles, one positive and one negative for each of the following.

1. 225o 2. 750o 3. -60o

4. -π 5. π/4 6. 5π/6

II. Evaluate the following trigonometric expressions.

7. sin(225o) 8. csc(750o) 9. cot(-60o)

10. tan(π/2) 11. cos(7π/4) 12. sec(-π/6)

III. Solve the following trigonometric equations. List answers in both degrees and radians. .

13. tan(θ) = 1 14. sin(θ) =  15. cos(θ) = 

16. cot(θ) =  17. sec(θ) =  18. csc(θ) = -2

IV. Using a calculator, solve for the angle, θ, where. Round answers to the nearest hundredth.

19. sin θ = 0.3907 20. cos θ = -0.3746 21. tan θ = 0.3640

22. sec θ = 1.0154 23. csc θ = 4.1336 24. cot θ = -0.1405

V. Solve for all six trig functions of ϴ with the given characteristics.

 19. An endpoint on the terminal side is (-6, -8). 20. ϴ is in Quadrant II and .

VI. Free Response Questions.

 21. Define a reference angle.

 22. Identify the angles on the unit circle with the same reference angles.

 23. Identify which trig functions are positive in each quadrant.

 24. List the domains and ranges:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Sine | Cosine | Arcsine | Arccosine | Arctangent |
| Domain |  |  |  |  |  |
| Range |  |  |  |  |  |

VII. Simplify the following inverse trig expressions.

 25.  26.  27. 

 28.  29.  30.  31. 

UNIT TWO

 Part 1

 2. Explain how to find the amplitude and vertical shift of a sinusoidal curve when given the max and min.

 3. Explain how to find the max and min of a sinusoidal curve when given the amplitude and vertical shift.

 4. Explain how you would find the period of a sinusoidal curve when given the x-values of a consecutive max and min.

Part 2
The times  of sunset (Greenwich Mean Time) at  north latitude on the 15th of each month are given

by the following equation: 

The month is represented by , with  corresponding to January. Minutes have been converted to the

decimal part of an hour for this data.

 5. What is the period of the model? Is it what you expected? Explain.

 6. What is the amplitude of the function? What does it represent in the model? Explain.

Part 3. Graphing: Be able to identify all transformations and characteristics given a trig function (such as domain, range, horizontal/vertical shifts, period, amplitude or vertical stretch/compression, reflections).

 8. Graph: a.)  b.) 

 c.)  d.) 

 e.)  f.) 

Part 4 . Write a sinusoidal equation with the given characteristics.

|  |  |  |
| --- | --- | --- |
| 9. Sine Curve Max is 20 ft Min is 2 ft Period is 2.5 minutes  | 10. Starts at a minimum Sinusoidal axis is y=112 Amplitude is 27 Distance between a consecutive max and min is 10 | 11. Starts at the center and is falling Min is -10 Amplitude is 25 Period is 12π |

Part 5. Inverse Trig Functions

 12. Graph the parent graphs for the three inverse trig functions.

 13. Explain why the domain and range are limited to the values they are.

UNIT THREE – Trig of any triangle

WS-10: Review of area problems

1. In ABC, AB = 10, AC = 8, and m<A = 45º. Find the area of ABC, to the nearest tenth of a square unit.

2. In an isosceles , the two equal sides each measure 24 meters, and they include an angle of 30º. Find the area of the isosceles triangle, to the nearest sq. meter.

3. In ABC, AB = 12 meters and AC = 20 meters. If the area of the triangle is 77 sq. meters, find the measure of <A, to the nearest degree.

4. In a rhombus, each side is 15, and one angle is 130º. Find the area of the rhombus, to the nearest square unit.

Smartboard Review

5. Find area based on the following information: a = 12 b = 20 c = 18

UNIT FOUR – Trig Identities

1. Simplify

 a)  b)  c)  d)  e)  f)  g)  h)  i) 

2. Verify

 a)  b) 

 c) 

 d)  e) 

 f)  g)  h) 

3. Solve for  and 

 a)  b)  c) 

 d)  e)  f) 

 g)  h)  i) 

 j)  k)  l) 

 m)  n) 

4. Find exact answer

a) Find the exact value of the trigonometric function given that , , and  and  are in Quadrant II.

 i.  ii.  iii. 

b) Find the exact values of , , and  using the double-angle formulas if , and .

Unit Four: Trig Identities

1. Simplify

 a)  b)  c)  d) 

 e)  f)  g) 

 h)  i) 

2. verify

 a)  b) 

 c) 

 d)  e) 

 f)  g)  h) 

3. Solve for  and 

 a)  b)  c) 

 d)  e)  f) 

 g)  h)  i) 

 j)  k)  l) 

Unit 5: Matrices

Find the standard form of the equation of the specified ellipse.

 1. Center: (2, -1); Vertex (2, ½),
 Minor axis has length of 2

 2. Vertices: ( ±5, 0) and eccentricity of 3/5

Find the center, vertices, foci, and eccentricity of the ellipse and sketch its graph.

3. 

Find the standard form of the equation of the specified hyperbola.

 4. Vertices: (1, ±2); Passes through the
 point (0,√ 5)

 5. Vertices: (3, 0) & (3,4);

 Asymptotes: 

6. Find the center, vertices, foci, and equations of the asymptotes of the hyperbola and sketch its graph. 

Unit 6: Conics

Find the determinant.

1.  2.  3. Multiply if possible. 

Find the inverse, if it exists.

4.  5. Find the area of a triangle with vertices (3, -2), (-1, -7), (4, 11)

Name the dimensions of the matrices.

6.  7.  8. 

Perform indicated operations. #12-16

9.  10. 

11.  12. 

13. 

Solve for x.

14.  15. 

16. Write the system as a matrix equation. DO NOT SOLVE!

 

Solve the system using matrices. Write the solutions as ordered pairs.

17.  18. 