Trig Closeout : **Create an answer sheet for this document!** All work should be done **NEATLY** and **IN ORDER** and stapled **BEHIND** the answer sheet. Please be sure to read directions! Give formulas if you are asked for formulas and provide definitions only when asked!

 ***Formulas***

1.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Arc Length \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (- degrees)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (- radians)

6. Sector Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (- degrees)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( -radians)

***Identities***

7. Reciprocal Identities

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Ratio Identities

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Pythagorean Identities

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sum and Difference Identities

10. Sine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Cosine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. Tangent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Double Angle Identities

13. Sine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Cosine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Half Angle Identities

15. Sine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. Cosine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Tangent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Formulas***

18. Polar Coordinates  Rectangular Coordinates

19. Rectangular Coordinates  Polar Coordinates

20. Geometric Multiplication: [r,]  [s,] = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. DeMoivre’s Theorem: [r, = \_\_\_omit\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. The  roots of z=[r,] = \_\_\_\_\_\_\_\_\_\_\_omit\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Amplitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. Vertical Shift \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. Law of Sines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26. Law of Cosines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27. Linear Velocity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28. Angle between Vectors\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. Dot Product of Vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 ***Definitions***

1. Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. y = x iff \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. y = x iff \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. y = x iff \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Right Triangle Trig.

sin= \_\_\_\_\_\_\_\_\_\_\_\_\_ cos=\_\_\_\_\_\_\_\_\_\_\_\_ tan=\_\_\_\_\_\_\_\_\_\_\_\_\_

 ***Problems***  **(Work for problems should be shown neatly on your paper. Answers should be written on this document!)**

1. 240= \_\_\_\_\_\_\_\_\_\_\_radians
2. 192= \_\_\_\_\_\_\_\_\_\_\_radians(exact)
3. 11/ 3 = \_\_\_\_\_\_\_\_\_\_
4. 2.5  \_\_\_\_\_\_\_\_\_\_\_\_\_
5. A sector of a circle had a radius of 7cm and a central angle of 53. Find its arc length and area.

6. tan 315 \_\_\_\_\_\_\_\_\_\_\_\_ 7. sec (-30) \_\_\_\_\_\_\_\_\_\_\_\_

8. cot (2/3) \_\_\_\_\_\_\_\_\_\_\_\_ 9. csc (-) \_\_\_\_\_\_\_\_\_\_\_\_

(6) 10. If tan x = -1/3, /2 < x < , find the value of the five remaining trig functions.

11.  \_\_\_\_\_\_\_\_\_\_\_ 12. cot ( sin(1/3) ) \_\_\_\_\_\_\_\_\_\_\_

13. csc ( sin(3/5) ) \_\_\_\_\_\_\_\_\_\_\_

14. Find the angle x-3y=9 makes with the positive x-axis. Support your answer.

 15. Solve 2cos+1= 0, 0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 16. Solve 2cos, inverse domain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 17. Evaluate 2cos()-1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (exact)

18. Find the exact value of tan(11) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. The sides of an isosceles triangle have lengths 5, 10, 10. Find the measures of its angles.

 ***Multiple Choice***- These will require you to show work. Please do so!

\_\_\_\_\_ 1. cos (270+x) is equivalent to

 a.) sinx b.) –sinx c.) cosx d.) -cosx e.) tanx

\_\_\_\_\_ 2. The expression sin (90+x)/ sin(-x) can be reduced to:

 a.)-1 b.)1 c.) cotx d.) -cotx e.) cosx

\_\_\_\_\_ 3. If cos x = 0.28, then cos (1/2) x =

 a.).64 b.).8 c.).6 d.)/2 e.) none of these

\_\_\_\_\_ 4. As angle x increases, from 45 to 225, sinx

1. increases throughout
2. increases, then decreases
3. decreases throughout
4. decreases, then increases
5. none of these

 \_\_\_\_\_ 5. For which value of x is $\frac{sinx}{sinx-cosx}$ NOT defined?

 a.) 0 b.) 30 c.) 45 d.) 60 e.) 75

 \_\_\_\_\_ 6. cot z- $\frac{cos2z}{sinzcosz}$ =

 a.)sinz b.)cosz c.)tanz d.)cotz e.)secz

 \_\_\_\_\_ 7. 2cosA sin A + 2sinA cos A equals which of the following?

 a.)cos2A b.)2sinA c.)2cosA d.)cosA e.)sin2A

 \_\_\_\_\_ 8. In triangle ABC, tan A= 1/2 and tanB= 1/3, find tanC.

 a.) -1 b.) 1 c.) 2/3 d.) 1/6 e.) 5/4

***Problems (again)***

9. Prove: (sec x – csc x) **/** (secx cscx) = sinx – cos x

10. Graph from 0 : y= (-2/3) sin (3x- ) + 2

 11. Solve the triangle $A=42°, B=78°, c=42cm$

12. Find the area of the triangle: A= 80, B= 55, C= 10 ft

13.A plane is flying at 515 miles per hour on a bearing of 281 degrees. A wind is blowing at 55 mph on a bearing of 113 degrees. Find the actual speed and direction of the plane.

14. A Pigeon is sitting on top of a Home Depot sign and spots a tasty cracker in the parking lot. The angle of depression from him to the cracker is 39 while he is 100ft in the air. How far will he have to fly to get the cracker?

 15. Find the area of triangle ABC if A=$38°, B=75°, c=7.2 ft$

16.) Graph 2 cycles of $y=2\csc(3x)-3$

17.) If y = /5, find the value of (2cos)(sin())(sin((3/2)+y)) in simplified form.

18.) A 52 lb box sits on a ramp inclined at 36 degrees with the horizontal. Using a force diagram, calculate the magnitude of the force that keeps the box from sliding down the ramp.

19) Factor $sin^{3}x-cos^{3}x$

20) Graph $r=1+3cosθ$ on a polar grid. (Choose unit circle values and graph points)

21) Given P(-2, 6) and Q(9, -5), find the component form of $\rightharpoonaccent{PQ}$.

22) A plane is flying at a speed of 572 miles per hour on a bearing of $214°$. A 58 mile per hour wind is blowing at a bearing of $168°$. Find the actual speed and direction (as a bearing) of the plane.