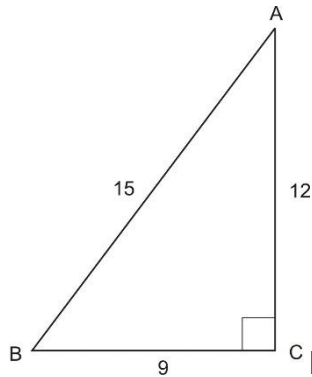


EP Trigonometry Final

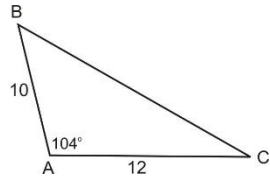
The numbers in parenthesis indicate the number of points a question is worth.
You may not use your notes or the online text book. You will need to graph and you may use a calculator.

1.



Find the six trig values of angle A. (6)

2.



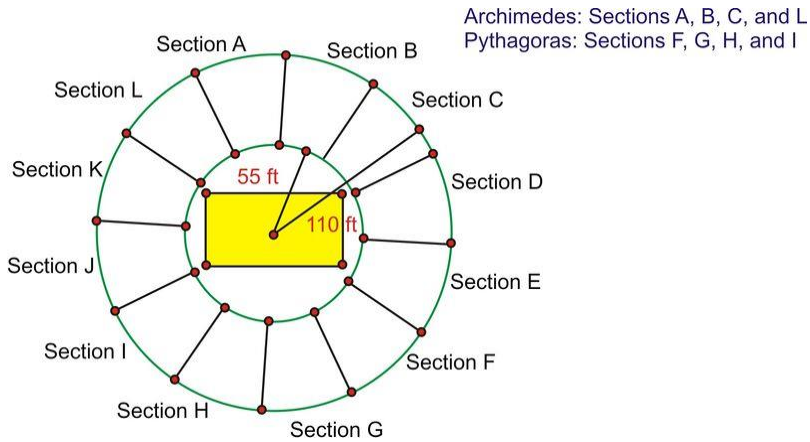
Find the area of the triangle. (2)

3.

If $\sin y = \frac{1}{3}$, what is $\cos y$? (2)

4.

How many square feet is each section? 55 ft. and 110 ft. are measurements from the center to the two circles. (2)

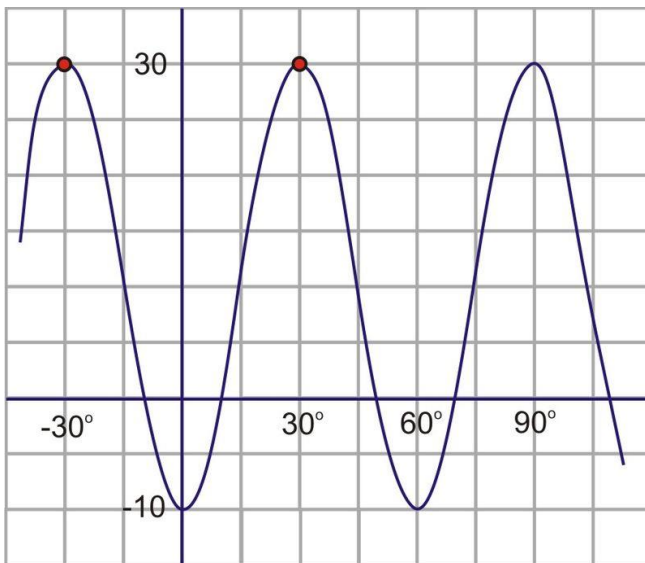


5.

One point is 3 m from the center of the circle, and another is 7 m farther away from the center than the first. Based on that information and the fact that it takes 12 seconds to complete a rotation:

1. Calculate the linear velocity of each point. (2)
2. Calculate the angular velocity of the points. (1)

6. Write the equation of the graph. (2)



7.

Identify the amplitude, period, frequency, maximum and minimum points, vertical shift, and horizontal shift of the following equation. (7)

$$y = 2 \cos(-x) + 3$$

8.

Graph $y = \sin x$ and $y = \cos x$ on the same set of axes over the interval $[0, 2\pi]$. Where do they intersect? (2)

9.

If $\tan(-x) = -\frac{5}{12}$ and $\sin x = -\frac{5}{13}$, find $\cos x$. (2)

10.

Solve the equation $\sin 2\theta = 0.6$ for $0 \leq \theta < 2\pi$. (2)

11.

Reduce the following to a single term: $\cos(x + y) \cos y + \sin(x + y) \sin y$. (2)

12.

Express the product as a sum: $\sin(6\theta) \sin(4\theta)$ (2)

13.

Find the exact value of the following expression: (2)

$$\sec^{-1} \left(\csc \frac{\pi}{6} \right)$$

14.

Find the inverse of the following: (2)

$$f(x) = 5 + \cos(2x - 1)$$

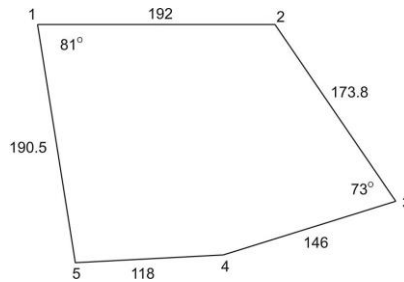
15. Sketch a graph of the following: (2)

$$y = 3 - \arcsin\left(\frac{1}{2}x + 1\right)$$

16.

The side of a rhombus is 12 cm and the longer diagonal is 21.5cm. Find the area of the rhombus and the measures of the angles in the rhombus. (2)

17.



Find the area of the pentagon.

(2)

18.

Find the magnitude of the horizontal and vertical components of the following vectors given the coordinates of their initial and terminal points. (3)

$$\text{initial} = (-3, 8)$$

$$\text{terminal} = (2, -1)$$

19.

Given P_1 and P_2 , calculate the distance between the points. (2)

$$P_1(1, 30^\circ) \text{ and } P_2(6, 135^\circ)$$

20.

Use the Product Theorem to find $4\left(\cos\frac{\pi}{4} + i\sin\frac{\pi}{4}\right)^2$. (2)