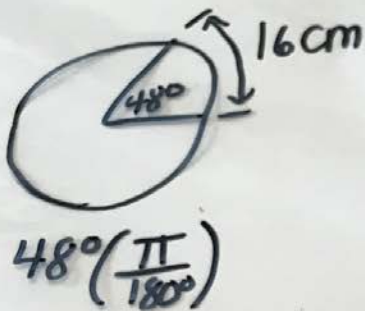


Trigonometric Functions Relay

TASK CARDS



$$s = r\theta$$
$$r = \frac{s}{\theta}$$
$$r = \frac{16\text{ cm}}{\frac{4\pi}{15}}$$
$$r = \frac{60\text{ cm}}{\pi}$$

ANSWERS:

- ① 87.04°
- ② $\frac{9\pi}{5} \approx 5.655$
- ③ $\frac{60\pi}{9} \text{ cm} \approx 19.09\text{ cm}$

2.

Convert from degrees to radians 32°

Convert the measure and answer to two places.

3.

Use the arc length formula to find the radius, r ;



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TRIGONOMETRIC FUNCTIONS RELAY ACTIVITY

This activity is designed to help your Pre-Calculus students evaluate circular functions in trigonometry as a mid-unit review for ***Trigonometric Functions***. There are 24 task cards in the activity. The cards cover the first half of my unit including graphs of trig functions.

Lesson Objectives:

Students will find exact values, approximate values, angle measures, central angles, arc measures, and answer questions related to graphs.

Copy the task cards on card stock and laminate for durability. I have also included six blank cards and answer sheets for the relay.

Flamingo Math

1.

Convert to decimal form
 $87^{\circ}2'14''$

2.

Convert from degrees to radians
 324°

3.

Use the arc length formula to find the radius r , given
 $s = 16 \text{ cm}$ $\theta = 48^{\circ}$

4.

Convert to degree measure and round your answer to two decimal places
 $\frac{32}{9}\pi$

5.

In a right triangle, find $\cot \theta$ if $\sin \theta = \frac{2}{3}$

6.

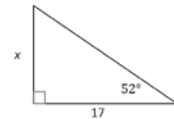
Evaluate to three decimal places
 $\tan 76.55^{\circ}$

7.

Find the angle in Quadrant I where
 $\sin \theta = \frac{\sqrt{3}}{2}$

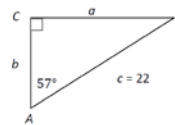
8.

Find x for the triangle below:



9.

Find the missing sides and angles to the nearest tenth.



10.

From the distance of 50 feet from the base of a building, the angle of elevation to the top of the building is 68° . Estimate the height of the building to the nearest foot.

11.

Find two coterminal angles, one positive and one negative, for the angle
 $\theta = 6^{\circ}$

12.

Suppose $(5, -7)$ is on the terminal side of θ . Find $\cot \theta$.

ANSWERS:

ANSWERS:

ANSWERS:

ANSWERS:

25.

Find the exact value of the expression
 $\sin\left(\frac{-8\pi}{7}\right)$

26.

Find θ for $\theta \in [0, 2\pi)$ where
 $\sin \theta = -1$

13.

Name the point on the terminal side of the angle
 $\theta = \frac{5\pi}{4}$

14.

Find the exact value of
 $\sin\left(\frac{7\pi}{6}\right)$

15.

Find $\sin \theta$ if $\cos \theta = \frac{4}{7}$ and $\tan \theta < 0$

16.

From a boat on the water, the angle of elevation of the top of a cliff is 30° . The base of the cliff is 100 feet from the boat. Find the height of the cliff to the nearest foot.

27.

Find amplitude, period and phase shift of
 $y = -3\cos(4x + \pi)$

28.

Graph:
 $y = 2\sin(x + \pi) - 1$

29.

Name the quadrant in which the angle θ lies if
 $\tan \theta < 0$ and $\sin \theta > 0$

30.

Find the exact value of the expression
 $3\cos\left(\frac{\pi}{4}\right) + 2\tan\left(\frac{3\pi}{4}\right)$

20.

Find the phase shift of the function
 $y = 2\sin(3x - \pi)$

22.

Find the zeros of the function on the interval $[0, 2\pi)$ for
 $f(x) = -4\sin x$

24.

Describe the transformation for the graph of the function
 $y = \sin(x) + 3$

17.

Find the value for θ , between $[0, 2\pi)$ where
 $\sin \theta = \frac{\sqrt{3}}{2}$ and $\tan \theta < 0$

Find the amplitude of the function
 $y = -5\sin 2x$

Find the first two asymptotes for the function
 $y = \tan\left(x - \frac{\pi}{4}\right)$

Trigonometric Functions Relay

PREPARATION:

1. Copy all the cards on card stock and cut them apart. Note: If you use 6 cards for a round, then you might like to copy the sets on different colors of card stock to keep the rounds organized and obvious to your students.
2. Arrange your classroom desks in rows (columns) of 5-6 desks. This will become a relay team.
3. The goal is to complete the relay round with all answers correct.
4. Students may work out their individual problems on white boards or paper.
5. If you display the sheet of questions on your overhead, students may work more than one question in the time allotted in order to help their team score points.

PLAYING THE ROUNDS:

1. Give the card set and relay answer sheet that corresponds to the round, to the student in the back of the row (column).
2. Have student shuffle the cards face down. Without looking they should take a card from the deck and pass the remaining cards to the person in front of them. When all students have a card in each team begin the round.
3. Every student can work on their card after the prompt to start is given. If they finish quickly, remind them to try a different question from the overhead.
4. When the student in the back of the room finishes their question, they will write the answer on the answer sheet and pass it to the person in front of them to do the same thing.
5. When the answer sheet arrives at the front of the room, this student will hand you their results to be checked.
6. If all answers are correct the round is ended. If there are mistakes give them the answer sheet to correct the mistakes. You can decide if you want to tell them which problems are wrong.

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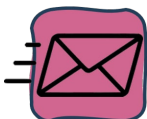
Meet the author:



My goal is to help you bring balance into your teacher life by providing relevant content, engaging activities, and comprehensive assessments for your high-stakes math course.

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