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Grade Book Detail

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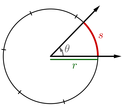
7.2

Started: February 13, 2021, 7:14 am
Last change: February 13, 2021, 4:01 pm
Total time questions were on-screen: 89.1 minutes.

Showing Scored Attempts | Show Last Attempts | Show Review Attempts

Consider the diagram shown below, which shows a circle centered at an angle's vertex where r is the circle's radius length (in some unit), s is the length of the subtended arc (in the same unit), and θ is the angle's radian measure.



a. Write a formula expressing θ in terms of s and r.

θ = s/r ✔ Preview

b. Write a formula expressing s in terms of θ and r. (Enter "theta" for θ.)

s = r*theta ✔ Preview

Show Answer
Show Answer

Question 1: 2 out of 2 in 1 attempt(s)

For each of the following angles, assume that the terminal ray of the angle opens up in the counter-clockwise direction.

a. A circle with a radius 6 cm long is centered at Angle A's vertex, and Angle A subtends an arc length of 9.6 cm along this circle.

i. The subtended arc is how many times as long as the circle's radius?

9.6/6 ✔ Preview

ii. Therefore, the radian measure of Angle A is:

9.6/6 ✔ radians Preview

b. A circle with a radius 16 cm long is centered at Angle B's vertex, and Angle B subtends an arc length of 96 cm along this circle. What is the radian measure of Angle B?

6 ✔ radians Preview

c. A circle with a radius 2 inches long is centered at Angle C's vertex, and Angle C subtends an arc length of 0.7854 inches along this circle. What is the radian measure of Angle C?

0.3927 ✔ radians Preview

Show Answer
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Question 2: 4 out of 4 in 10 attempt(s)

For each of the following angles, assume that the terminal ray of the angle opens up in the counter-clockwise direction.

a. Angle A has a measure of 0.7 radians. A circle with a radius length of 7 cm is centered at Angle A's vertex.

The arc subtended by Angle A (along this circle) is 0.7 ✔ times as long as the circle's radius. Therefore, the length of the subtended arc is:

4.9 ✔ cm Preview

b. Angle B has a measure of 2.5 radians. A circle with a radius length of 2.6 cm is centered at Angle B's vertex. What is the length of the subtended arc along this circle?

6.5 ✔ cm Preview

c. Angle C has a measure of $\frac{\pi}{7}$ radians. A circle with a radius length of 11 inches is centered at Angle C's vertex. What is the length of the subtended arc along this circle?

11pi/3 ✔ inches Preview

Show Answer
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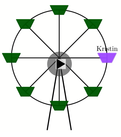
Question 3: 4 out of 4 in 6 attempt(s)

Kristin boards a Ferris wheel at the 3-o'clock position and rides the Ferris wheel for one full rotation (as shown below). The radius of the Ferris wheel is 9 meters. Imagine an angle with a vertex at the center of the Ferris wheel that subtends the arc along which Kristin travels.



a. If Kristin travels 12.6 meters, what is the angle's measure in radians?

12.6/9 ✔ radians Preview

b. If Kristin travels 24.3 meters, what is the angles' measure in radians?

24.3/9 ✔ radians Preview

c. Let s represent the varying number of meters that Kristin has traveled since the Ferris wheel started rotating. Write an expression that represents the varying measure of the angle (in radians).

s/9 ✔ Preview

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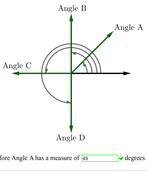
Question 4: 3 out of 3 in 4 attempt(s)

Four angles are shown below. Recall that there are 360 degrees in one full rotation.



a. Angle A is $\frac{1}{8}$ of a full rotation and therefore Angle A has a measure of 45 ✔ degrees. Preview

✔ Correct! Since Angle A is $\frac{1}{8}$ of a full rotation and there are 360 degrees in a full rotation, the measure of Angle A is $\frac{1}{8} \cdot 360 = 45$ degrees.

b. Angle B is 1/4 ✔ of a full rotation and therefore Angle B has a measure of 90 ✔ degrees. Preview

✔ Correct! Since Angle B is $\frac{1}{4}$ of a full rotation and there are 360 degrees in a full rotation, the measure of Angle B is $\frac{1}{4} \cdot 360 = 90$ degrees.

c. Angle C is 1/2 ✔ of a full rotation and therefore Angle C has a measure of 180 ✔ degrees. Preview

✔ Correct! Since Angle C is $\frac{1}{2}$ of a full rotation and there are 360 degrees in a full rotation, the measure of Angle C is $\frac{1}{2} \cdot 360 = 180$ degrees.

d. Angle D is 3/4 ✔ of a full rotation and therefore Angle D has a measure of 270 ✔ degrees. Preview

✔ Correct! Since Angle D is $\frac{3}{4}$ of a full rotation and there are 360 degrees in a full rotation, the measure of Angle D is $\frac{3}{4} \cdot 360 = 270$ degrees.

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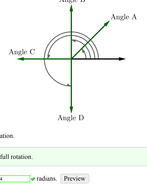
Question 5: 4 out of 4 in 7 attempt(s)

Four angles are shown below. Recall that an angle completing a full rotation measures 2π radians.



a. Angle A represents 1/8 ✔ of a full rotation.

✔ Correct! Angle A represents $\frac{1}{8}$ of a full rotation.

Therefore, Angle A has a measure of pi/4 ✔ radians. Preview

✔ Correct! Since Angle A represents $\frac{1}{8}$ of a full rotation and an angle completing one full rotation measures 2π radians, the measure of Angle A is $\frac{1}{8} \cdot 2\pi = \frac{\pi}{4}$ radians.

b. Angle B represents 1/4 ✔ of a full rotation.

✔ Correct! Angle B represents $\frac{1}{4}$ of a full rotation.

Therefore, Angle B has a measure of pi/2 ✔ radians. Preview

✔ Correct! Since Angle B represents $\frac{1}{4}$ of a full rotation and an angle completing one full rotation measures 2π radians, the measure of Angle B is $\frac{1}{4} \cdot 2\pi = \frac{\pi}{2}$ radians.

c. Angle C represents 1/2 ✔ of a full rotation.

✔ Correct! Angle C represents $\frac{1}{2}$ of a full rotation.

Therefore, Angle C has a measure of pi ✔ radians. Preview

✔ Correct! Since Angle C represents $\frac{1}{2}$ of a full rotation and an angle completing one full rotation measures 2π radians, the measure of Angle C is $\frac{1}{2} \cdot 2\pi = \pi$ radians.

d. Angle D represents 3/4 ✔ of a full rotation.

✔ Correct! Angle D represents $\frac{3}{4}$ of a full rotation.

Therefore, Angle D has a measure of 3pi/2 ✔ radians. Preview

✔ Correct! Since Angle D represents $\frac{3}{4}$ of a full rotation and an angle completing one full rotation measures 2π radians, the measure of Angle D is $\frac{3}{4} \cdot 2\pi = \frac{3\pi}{2}$ radians.

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Question 6: 4 out of 4 in 3 attempt(s)

A point starts at the location $(5, 0)$ and travels 12.75 units CCW along a circle with a radius of 5 units that is centered at $(0, 0)$. Consider an angle whose vertex is at $(0, 0)$ and whose rays subtend the path that the point traveled. Draw a diagram of this to make sure you understand the context.

a. What is the radian measure of this angle?

12.75/5 ✔ radians Preview

b. What is the degree measure of this angle?

146.104 ✔ degrees Preview

Show Answer
Show Answer

Question 7: 2 out of 2 in 2 attempt(s)

Total: 23/23

Categorized Score Breakdown

Category	Points Earned / Possible (Percent)
	19 / 19 (100 %)