Grade Book Detail

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7.4

Started: February 19, 2021, 12:37 am
Last change: February 19, 2021, 1:20 am
Time spent: 43 minutes
Total time questions were on-screen: 36.8 minutes.

Showing Scored Attempts | Show Last Attempts | Show Review Attempts

A toy racecar races along a circular race track that has a radius of 32 meters. The racecar starts at the 3-o'clock position of the track and travels in the CCW direction. **Suppose the car has swept out 1.8 radians since it started moving.**

a. The racecar is how many *radius lengths* to the right of the center of the race track?

cos(1.8) ✔ radius lengths Preview

b. The racecar is how many *meters* to the right of the center of the race track?

32cos(1.8) ✔ meters Preview

c. The racecar is how many *radius lengths* above the center of the race track?

sin(1.8) ✔ radius lengths Preview

d. The racecar is how many *meters* above the center of the race track?

32sin(1.8) ✔ meterss Preview

Show Answer
Show Answer
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Question 1: 4 out of 4 in 1 attempt(s)

A toy racecar races along a circular race track that has a radius of 27 meters. The racecar starts at the 3-o'clock position of the track and travels in the CCW direction.

a. Suppose the racecar has traveled 50 meters along the race track.

i. How many radians has the racecar swept out?

50/27 ✔ radians Preview

ii. What is the racecar's distance to the right of the center of the race track (in meters)?

27cos(1.85185) ✔ meters Preview

iii. What is the racecar's distance above the center of the race track (in meters)?

27sin(1.85185) ✔ meters Preview

b. Let d represent the racecar's varying distance traveled (in meters) along the circular race track.

i. Write an expression (in terms of d) to represent the racecar's distance to the right of the center of the race track (in meters).

27cos(d/27) ✔ Preview

ii. Write an expression (in terms of d) to represent the racecar's distance above the center of the race track (in meters).

27sin(d/27) ✔ Preview

Show Answer
Show Answer
Show Answer
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Show Answer

Question 2: 5 out of 5 in 3 attempt(s)

A skier skis along a circular ski trail that has a radius of 1.1 km. The skier starts at the East side of the ski trail and travels in the CCW direction. Let θ represent the radian measure of the angle the skier has swept out.

a. Write an expression (in terms of θ) to represent the skier's distance to the East of the center of the ski trail (in km).

1.1cos(theta) ✔ Preview

b. Write an expression (in terms of θ) to represent the skier's distance to the North of the center of the ski trail (in km).

1.1sin(theta) ✔ Preview

Hint: enter "theta" for θ.

Show Answer
Show Answer

Question 3: 2 out of 2 in 3 attempt(s)

A skier skis along a circular ski trail that has a radius of 1.25 km. The skier starts at the East side of the ski trail and travels **in the CW (CLOCKWISE**, not CCW) direction. Let θ represent the varying number of radians the skier has swept out in the CW direction.

a. Write an expression (in terms of θ) to represent the skier's distance to the East of the center of the ski trail (in km).

1.25cos(theta) ✔ Preview

b. Write an expression (in terms of θ) to represent the skier's distance to the North of the center of the ski trail (in km).

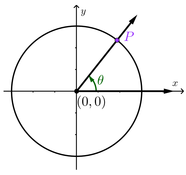
-1.25sin(theta) ✔ Preview

Hint: enter "theta" for θ.

Show Answer
Show Answer

Question 4: 2 out of 2 in 2 attempt(s)

Consider the diagram below that shows an angle with a measure of θ radians and the terminal point P of the angle.



Match each of the following scenarios with the Quadrant that P lives in.

Quad IV ✔ $\cos(\theta) > 0$ and $\sin(\theta) < 0$
Quad. III ✔ $\cos(\theta) < 0$ and $\sin(\theta) < 0$
Quad. II ✔ $\cos(\theta) < 0$ and $\sin(\theta) > 0$
Quad. I ✔ $\sin(\theta) > 0$ and $\cos(\theta) > 0$

✔

Show Answer

Question 5: 1 out of 1 in 14 attempt(s)

It's true that $\cos\left(\frac{\pi}{3}\right) = \frac{1}{2}$ and $\sin\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}}{2}$. Draw a diagram of an angle with a measure of $\frac{\pi}{3}$ radians, and then label your diagram with $\frac{1}{2}$ and $\frac{\sqrt{3}}{2}$.

Using your diagram (and drawing in more angles), determine the *exact* values of the following expressions. Your answer should not contain decimal values, just fractions and square roots. Note that you can enter "sqrt(...)" for $\sqrt{...}$.

a. $\cos\left(\frac{2\pi}{3}\right) =$ -1/2 ✔ Preview

b. $\sin\left(\frac{2\pi}{3}\right) =$ sqrt(3)/2 ✔ Preview

c. $\cos\left(\frac{4\pi}{3}\right) =$ -1/2 ✔ Preview

d. $\sin\left(\frac{4\pi}{3}\right) =$ -sqrt(3)/2 ✔ Preview

e. $\cos\left(\frac{5\pi}{3}\right) =$ 1/2 ✔ Preview

f. $\sin\left(\frac{5\pi}{3}\right) =$ -sqrt(3)/2 ✔ Preview

Show Answer
Show Answer
Show Answer
Show Answer
Show Answer
Show Answer

Question 6: 3 out of 3 in 1 attempt(s)

Suppose a represents some number of radians where $0 < a < \frac{\pi}{2}$, and $\cos(a) = 0.54$ and $\sin(a) = 0.84$. Determine the values of the following expressions.

a. $\cos(-a) =$ 0.54 ✔ Preview

b. $\sin(-a) =$ -0.84 ✔ Preview

Hint: it might help to start by drawing a diagram of two angles: one with a measure of a radians, and one with a measure of $-a$ radians.

Show Answer
Show Answer

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

Total: 19/19

Categorized Score Breakdown

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