







Question No. 1 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>1. Convert 36° to radians.</p> <p>(A) $\frac{\pi}{5}$</p> <p>(B) $\frac{\pi}{10}$</p> <p>(C) $\frac{\pi}{3}$</p> <p>(D) 5π</p> <p>(E) 10π</p>
 <p>Feedback</p>	<p>A. Correct! You used the degree to radian conversion formula to solve.</p> <p>B. Incorrect! Use the degree to radian conversion formula to solve.</p> <p>C. Incorrect! Use the degree to radian conversion formula to solve.</p> <p>D. Incorrect! Use the degree to radian conversion formula to solve.</p> <p>E. Incorrect! Use the degree to radian conversion formula to solve.</p>
 <p>Solution</p>	<p>Use the degree to radian conversion formula to solve.</p> $\text{degrees} \cdot \frac{\pi}{180^\circ} = \text{radians}$ $36^\circ \cdot \frac{\pi}{180^\circ} = \text{radians}$ $\frac{36 \cdot \pi}{180} = \text{radians}$ $\frac{\pi}{5} = \text{radians}$ <p>The correct answer is (A).</p>




Question No. 2 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>2. Write 0.47623 radian in degrees, minutes, and seconds.</p> <p>(A) 36° 41' 21" (B) 27° 22' 15" (C) 23° 17' 10" (D) 27° 17' 10" (E) 85° 43' 17"</p>
 <p>Feedback</p>	<p>A. Incorrect! Convert the radians to degrees then the degree decimal to minutes and seconds to get the solution.</p> <p>B. Incorrect! Convert the radians to degrees then the degree decimal to minutes and seconds to get the solution.</p> <p>C. Incorrect! Convert the radians to degrees then the degree decimal to minutes and seconds to get the solution.</p> <p>D. Correct! Convert the radians to degrees then the degree decimal to minutes and seconds to get the solution. of 27°17'10".</p> <p>E. Incorrect! One of the given answer choices is correct.</p>
 <p>Solution</p>	<p>Step 1: Convert radians to degrees.</p> $0.47632 \text{ rad} = 0.47632 \cdot \frac{180^\circ}{\pi} = 27.286^\circ$ <p>Step 2: Convert the fraction part of the degree measure to minutes.</p> $0.286^\circ = 0.286 \cdot 60 = 17.16'$ <p>Step 3: Convert the fraction part of the minute measure to seconds.</p> $0.16' = 0.16 \cdot 60'' = 9.6'' \approx 10''$ <p>The angle written in degrees, minutes, and seconds is 27° 17' 10".</p> <p>The correct answer is (D).</p>




Question No. 3 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>3. Given the $\theta = 121^\circ 6' 18''$ and $r = 0.2163$, find the arc length.</p> <p>(A) 0.4572 (B) 0.3531 (C) 0.7632 (D) 0.4632 (E) 0.4583</p>
 <p>Feedback</p>	<p>A. Correct! Convert the degree measure to radians then use the formula for arc length to find the arc length is 0.4572.</p> <p>B. Incorrect! Convert the degree measure to radians then use the formula for arc length.</p> <p>C. Incorrect! Convert the degree measure to radians then use the formula for arc length.</p> <p>D. Incorrect! Convert the degree measure to radians then use the formula for arc length.</p> <p>E. Incorrect! One of the given answer choices is correct.</p>
 <p>Solution</p>	<p>Step 1: Get the decimal form of the degree measure.</p> $121^\circ 6' 18'' = 121^\circ + 6' + 18'' = 121 + 6 \cdot \frac{1}{60} + 18 \cdot \frac{1}{60} \cdot \frac{1}{60} = 121.105^\circ$ <p>Step 2: Convert the degree measure to the radians.</p> $121.105^\circ = 121.105 \cdot \frac{\pi}{180} \approx 2.1137 \text{ rad}$ <p>Step 3: Use the formula to get the arc length.</p> $s = \theta r$ $= 2.1137 \cdot 0.2163$ ≈ 0.4572 <p>The correct answer is (A).</p>


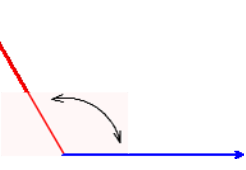


Question No. 4 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>4. Find the area of the sector with radius $r = 25$ cm, and the angle $\theta = 0.24$ radian.</p> <p>(A) 75 cm^2 (B) 45 cm^2 (C) 65 cm^2 (D) 15 cm^2 (E) 6 cm^2</p>
 <p>Feedback</p>	<p>A. Correct! You used the formula for the area of a sector to find the area of the sector is 75 cm^2.</p> <p>B. Incorrect! Use the formula for the area of a sector to find the solution.</p> <p>C. Incorrect! Use the formula for the area of a sector to find the solution.</p> <p>D. Incorrect! Use the formula for the area of a sector to find the solution.</p> <p>E. Incorrect! Use the formula for the area of a sector to find the solution.</p>
 <p>Solution</p>	<p>Use the formula for the area of a sector to find the solution.</p> $A = \frac{1}{2} r^2 \theta$ $= \frac{1}{2} \cdot 25^2 \cdot 0.24$ $= 75 \text{ cm}^2$ <p>The correct answer is (A).</p>


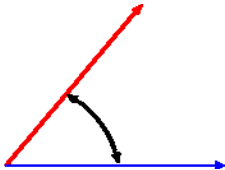


Question No. 5 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>5. Which degree measure may be equal to the given angle?</p>  <p>(A) 25° (B) 140° (C) 235° (D) -175° (E) -35°</p>
 <p>Feedback</p>	<p>A. Incorrect! The given angle is a positive second quadrant angle.</p> <p>B. Correct! This is the only angle measure that is a positive second quadrant angle like the given angle.</p> <p>C. Incorrect! The given angle is a positive second quadrant angle.</p> <p>D. Incorrect! The given angle is a positive second quadrant angle.</p> <p>E. Incorrect! The given angle is a positive second quadrant angle.</p>
 <p>Solution</p>	<p>Since the angle is larger than 90° but smaller than 180°, we know it is a second quadrant angle. The direction of the angle is counterclockwise so we know the angle is positive. The only positive angle measure that is between 90° and 180° is 140°.</p> <p>The correct answer is (B).</p>




Question No. 6 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>6. Which radian measure may be equal to the given angle?</p>  <p>(A) $\frac{2\pi}{5}$ rad (B) $\frac{3\pi}{5}$ rad (C) $\frac{6\pi}{5}$ rad (D) $-\frac{4\pi}{5}$ rad (E) $-\frac{\pi}{5}$ rad</p>
 <p>Feedback</p>	<p>A. Correct! The given angle is positive and less than $\frac{\pi}{2}$ radians so it could equals $\frac{2\pi}{5}$ rad .</p> <p>B. Incorrect! The angle is positive and less than $\frac{\pi}{2}$ radians.</p> <p>C. Incorrect! The angle is positive and less than $\frac{\pi}{2}$ radians</p> <p>D. Incorrect! The angle is positive and less than $\frac{\pi}{2}$ radians</p> <p>E. Incorrect! The angle is positive and less than $\frac{\pi}{2}$ radians</p>
 <p>Solution</p>	<p>Since the angle is less than 90°, we know it is a first quadrant angle. The direction of the angle is counterclockwise so we know the angle is positive. The only positive angle measure that is less than 90° is $\frac{2\pi}{5}$ rad .</p> <p>The correct answer is (A).</p>

Question No. 7 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>7. If the terminal ray of θ passes through $(0.8321, 0.5546)$ on the unit circle, which quadrant does the terminal side lie in?</p> <p>(A) Quadrant I (B) Quadrant II (C) Quadrant III (D) Quadrant IV (E) θ is a quadrantal angle.</p>
 <p>Feedback</p>	<p>A. Correct! Since both coordinates of the point on the terminal side are positive, it follows that the terminal side of this angle lies in quadrant I.</p> <p>B. Incorrect! Use the fact that both coordinates of the point on the terminal side are positive to find that the quadrant the terminal side lies in.</p> <p>C. Incorrect! Use the fact that both coordinates of the point on the terminal side are positive to find that the quadrant the terminal side lies in.</p> <p>D. Incorrect! Use the fact that both coordinates of the point on the terminal side are positive to find that the quadrant the terminal side lies in.</p> <p>E. Incorrect! Use the fact that both coordinates of the point on the terminal side are positive to find that the quadrant the terminal side lies in.</p>
 <p>Solution</p>	<p>The points in quadrant 1 have coordinates with positive signs. Since the given point on the terminal side of this angle has positive coordinates, the terminal side of this angle lies in quadrant 1.</p> <p>The correct answer is (A).</p>

Question No. 8 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.



Question

8. Which radian measure is equivalent to 12° ?

- (A) $\frac{\pi}{30}$ rad
- (B) $\frac{\pi}{15}$ rad
- (C) 15π rad
- (D) 12π rad
- (E) 168 rad



Feedback

A. Incorrect!
Use the formula to convert degrees to radians to find the equivalent radian measure.

B. Correct!
Use the formula to convert degrees to radians to find 12° is equivalent to $\frac{\pi}{15}$ radians.

C. Incorrect!
Use the formula to convert degrees to radians to find the equivalent radian measure.

D. Incorrect!
Use the formula to convert degrees to radians to find the equivalent radian measure.

E. Incorrect!
Use the formula to convert degrees to radians to find the equivalent radian measure.



Solution




Use the formula to convert degrees to radians to find the equivalent radian measure.

$$120^\circ \cdot \frac{\pi}{180^\circ} = \text{radians}$$
$$\frac{120\pi}{180} = \text{radians}$$
$$\frac{\pi}{15} = \text{radians}$$

The correct answer is (B).

Question No. 9 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

 <p>Question</p>	<p>9. What is the degree equivalent of $\frac{\pi}{18}$ rad ?</p> <p>(A) 163° (B) 0.1° (C) 10° (D) 198° (E) 20°</p>
 <p>Feedback</p>	<p>A. Incorrect! Use the formula to convert radians to degrees to find the equivalent degree measure.</p> <p>B. Incorrect! Use the formula to convert radians to degrees to find the equivalent degree measure.</p> <p>C. Correct! You used the formula to convert radians to degrees to find $\frac{\pi}{18}$ rad is equivalent to 10°.</p> <p>D. Incorrect! Use the formula to convert radians to degrees to find the equivalent degree measure.</p> <p>E. Incorrect! Use the formula to convert radians to degrees to find the equivalent degree measure.</p>
 <p>Solution</p>	<p>Use the formula to convert radians to degrees to find the equivalent degree measure.</p> $\frac{\pi}{18} \cdot \frac{180^\circ}{\pi} = \text{degrees}$ $\frac{180^\circ}{18} = \text{degrees}$ $10^\circ = \text{degrees}$ <p>The correct answer is (C).</p>

Question No. 10 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

**Question**

10. What is the supplement of an angle that measures $\frac{\pi}{6}$ rad?

- (A) $\frac{\pi}{3}$ rad
- (B) $\frac{5\pi}{6}$ rad
- (C) $\frac{\pi}{6}$ rad
- (D) $\frac{11\pi}{12}$ rad
- (E) $\frac{\pi}{6}$ rad

**Feedback**

A. Incorrect!

Find the supplement of the given angle by subtracting the given angle from π .

B. Correct!

You subtracted the given angle from π to get the supplement is $\frac{5\pi}{6}$ rad . π

C. Incorrect!

Find the supplement of the given angle by subtracting the given angle from π .

D. Incorrect!

Find the supplement of the given angle by subtracting the given angle from π .

E. Incorrect!

Find the supplement of the given angle by subtracting the given angle from π .

**Solution**

Supplementary angles add up to 180° or π radians. Subtract $\frac{\pi}{6}$ from π :

$$\begin{aligned}\pi - \frac{\pi}{6} &= \frac{6\pi}{6} - \frac{\pi}{6} \\ &= \frac{5\pi}{6}\end{aligned}$$

The correct answer is (B).