

Reviewing Fundamental Trigonometry Concepts in Less 14 Minutes

Lesson 153 | Trigonometry | Unit circle and exact values • Right-triangle trigonometry • Inverse trigonometric functions

<https://www.youtube.com/watch?v=MPU8eS-0-fA>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

Find exact $\sin(870^\circ)$ and $\cos(870^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

02

In a right triangle, acute angle θ has opposite leg 28 and adjacent leg 63. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

03

Let $\theta = \arctan(5/2)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

Reviewing Fundamental Trigonometry Concepts in Less 14 Minutes

Lesson 153 | Trigonometry | Unit circle and exact values • Right-triangle trigonometry • Inverse trigonometric functions

<https://www.youtube.com/watch?v=MPU8eS-0-fA>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

04

Find exact $\sin(2820^\circ)$ and $\cos(2820^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

05

In a right triangle, acute angle θ has opposite leg 36 and adjacent leg 18. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

06

Let $\theta = \arctan(14/3)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

Reviewing Fundamental Trigonometry Concepts in Less 14 Minutes

Lesson 153 | Trigonometry | Unit circle and exact values • Right-triangle trigonometry • Inverse trigonometric functions

<https://www.youtube.com/watch?v=MPU8eS-0-fA>

Related review: exact coverage needs teacher confirmation.

01

Find exact $\sin(870^\circ)$ and $\cos(870^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

Coterminal angle 150° . Coordinates $(\cos \theta, \sin \theta) = (-\sqrt{3}/2, 1/2)$; the first is cosine and the second is sine.

02

In a right triangle, acute angle θ has opposite leg 28 and adjacent leg 63. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse $= 7\sqrt{97}$. $\sin \theta = 4/\sqrt{97}$; $\cos \theta = 9/\sqrt{97}$; $\tan \theta = 4/9$; $\csc \theta = \sqrt{97}/4$; $\sec \theta = \sqrt{97}/9$; $\cot \theta = 9/4$.
 $\theta = \arctan(4/9) \approx 24.0^\circ$.

03

Let $\theta = \arctan(5/2)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

The ratio is positive, so $0 < \theta < \pi/2$. Use opposite 5, adjacent 2, hypotenuse $\sqrt{29}$. $\sin \theta = 5 \cdot \sqrt{(29)/29}$; $\cos \theta = 2 \cdot \sqrt{(29)/29}$.

Reviewing Fundamental Trigonometry Concepts in Less 14 Minutes

Lesson 153 | Trigonometry | Unit circle and exact values • Right-triangle trigonometry • Inverse trigonometric functions

<https://www.youtube.com/watch?v=MPU8eS-0-fA>

Related review: exact coverage needs teacher confirmation.

04

Find exact $\sin(2820^\circ)$ and $\cos(2820^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

Coterminal angle 300° . Coordinates $(\cos \theta, \sin \theta) = (1/2, -\sqrt{3}/2)$; the first is cosine and the second is sine.

05

In a right triangle, acute angle θ has opposite leg 36 and adjacent leg 18. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse $= 6\sqrt{45}$. $\sin \theta = 6/\sqrt{45}$; $\cos \theta = 3/\sqrt{45}$; $\tan \theta = 6/3$; $\csc \theta = \sqrt{45}/6$; $\sec \theta = \sqrt{45}/3$; $\cot \theta = 3/6$.
 $\theta = \arctan(6/3) \approx 63.4^\circ$.

06

Let $\theta = \arctan(14/3)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

The ratio is positive, so $0 < \theta < \pi/2$. Use opposite 14, adjacent 3, hypotenuse $\sqrt{205}$. $\sin \theta = 14 \cdot \sqrt{(205)/205}$; $\cos \theta = 3 \cdot \sqrt{(205)/205}$.