

The Secret of Inverse Trigonometric Functions (Pre Calculus 7 4 Inverse Trig Functions)

Lesson 224 | Precalculus | Inverse trigonometric functions

<https://www.youtube.com/watch?v=N685ejnCz1M>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Let $\theta = \arctan(6/11)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

02

Let $\theta = \arctan(4/6)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

03

Let $\theta = \arctan(12/6)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

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04

Let $\theta = \arctan(6/4)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

05

Let $\theta = \arctan(8/14)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

06

Let $\theta = \arctan(5/14)$ using the principal value. Find exact $\sin \theta$ and $\cos \theta$, and state its quadrant.

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01

Let $\theta = \arctan(6/11)$ 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 6, adjacent 11, hypotenuse $\sqrt{157}$. $\sin \theta = 6 \cdot \sqrt{157}/157$; $\cos \theta = 11 \cdot \sqrt{157}/157$.

02

Let $\theta = \arctan(4/6)$ 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 4, adjacent 6, hypotenuse $\sqrt{52}$. $\sin \theta = 2 \cdot \sqrt{13}/13$; $\cos \theta = 3 \cdot \sqrt{13}/13$.

03

Let $\theta = \arctan(12/6)$ 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 12, adjacent 6, hypotenuse $\sqrt{180}$. $\sin \theta = 2 \cdot \sqrt{5}/5$; $\cos \theta = \sqrt{5}/5$.

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04

Let $\theta = \arctan(6/4)$ 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 6, adjacent 4, hypotenuse $\sqrt{52}$. $\sin \theta = 3 \cdot \sqrt{13}/13$; $\cos \theta = 2 \cdot \sqrt{13}/13$.

05

Let $\theta = \arctan(8/14)$ 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 8, adjacent 14, hypotenuse $\sqrt{260}$. $\sin \theta = 4 \cdot \sqrt{65}/65$; $\cos \theta = 7 \cdot \sqrt{65}/65$.

06

Let $\theta = \arctan(5/14)$ 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 14, hypotenuse $\sqrt{221}$. $\sin \theta = 5 \cdot \sqrt{221}/221$; $\cos \theta = 14 \cdot \sqrt{221}/221$.