

Pre Calculus 6 2 Right Triangles Trigonometry

Lesson 221 | Precalculus | Right-triangle trigonometry

https://www.youtube.com/watch?v=-Ehs0ZdtU_w

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

In a right triangle, acute angle θ has opposite leg 25 and adjacent leg 35. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

02

In a right triangle, acute angle θ has opposite leg 18 and adjacent leg 4. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

03

In a right triangle, acute angle θ has opposite leg 36 and adjacent leg 32. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

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04

In a right triangle, acute angle θ has opposite leg 42 and adjacent leg 60. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

05

In a right triangle, acute angle θ has opposite leg 12 and adjacent leg 24. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

06

In a right triangle, acute angle θ has opposite leg 14 and adjacent leg 8. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

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01

In a right triangle, acute angle θ has opposite leg 25 and adjacent leg 35. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $5\sqrt{74}$. $\sin \theta = 5/\sqrt{74}$; $\cos \theta = 7/\sqrt{74}$; $\tan \theta = 5/7$; $\csc \theta = \sqrt{74}/5$; $\sec \theta = \sqrt{74}/7$; $\cot \theta = 7/5$.
 $\theta = \arctan(5/7) \approx 35.5^\circ$.

02

In a right triangle, acute angle θ has opposite leg 18 and adjacent leg 4. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $2\sqrt{85}$. $\sin \theta = 9/\sqrt{85}$; $\cos \theta = 2/\sqrt{85}$; $\tan \theta = 9/2$; $\csc \theta = \sqrt{85}/9$; $\sec \theta = \sqrt{85}/2$; $\cot \theta = 2/9$.
 $\theta = \arctan(9/2) \approx 77.5^\circ$.

03

In a right triangle, acute angle θ has opposite leg 36 and adjacent leg 32. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $4\sqrt{145}$. $\sin \theta = 9/\sqrt{145}$; $\cos \theta = 8/\sqrt{145}$; $\tan \theta = 9/8$; $\csc \theta = \sqrt{145}/9$; $\sec \theta = \sqrt{145}/8$; $\cot \theta = 8/9$. $\theta = \arctan(9/8) \approx 48.4^\circ$.

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04

In a right triangle, acute angle θ has opposite leg 42 and adjacent leg 60. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $6\sqrt{149}$. $\sin \theta = 7/\sqrt{149}$; $\cos \theta = 10/\sqrt{149}$; $\tan \theta = 7/10$; $\csc \theta = \sqrt{149}/7$; $\sec \theta = \sqrt{149}/10$; $\cot \theta = 10/7$. $\theta = \arctan(7/10) \approx 35.0^\circ$.

05

In a right triangle, acute angle θ has opposite leg 12 and adjacent leg 24. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $2\sqrt{180}$. $\sin \theta = 6/\sqrt{180}$; $\cos \theta = 12/\sqrt{180}$; $\tan \theta = 6/12$; $\csc \theta = \sqrt{180}/6$; $\sec \theta = \sqrt{180}/12$; $\cot \theta = 12/6$. $\theta = \arctan(6/12) \approx 26.6^\circ$.

06

In a right triangle, acute angle θ has opposite leg 14 and adjacent leg 8. Find the hypotenuse, all six trig ratios, and θ to 0.1° .

Hypotenuse = $2\sqrt{65}$. $\sin \theta = 7/\sqrt{65}$; $\cos \theta = 4/\sqrt{65}$; $\tan \theta = 7/4$; $\csc \theta = \sqrt{65}/7$; $\sec \theta = \sqrt{65}/4$; $\cot \theta = 4/7$. $\theta = \arctan(7/4) \approx 60.3^\circ$.