

Precalculus Honors

Trigonometric Functions

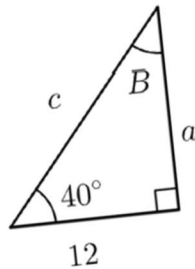


Lesson 4.11 - Modeling with Trigonometry

Warm-Up #1

1. Solve the right triangle.

$$\begin{aligned} B &= 50^\circ \\ a &\approx 10.07 \\ c &\approx 15.66 \end{aligned}$$



2. In an isosceles triangle with base angles 34° and a base of 12 inches, find the altitude of the triangle. Round your answer to two decimal places.

$$\begin{aligned} \tan 34^\circ &= \frac{h}{6} \\ h &\approx \underline{\underline{4.05''}} \end{aligned}$$



3. The sun is 40° above the horizon. Find the length of a shadow cast by a building that is 75 ft tall. Round your answer to the nearest foot.

75



Warm-Ups

4

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PRECALCULUS CURRICULUM

Scope and Sequence

Unit 4: Trigonometric Functions

Lesson	Skills & Learning Objectives
[4.1] Angles and Their Measure	☐ Convert from decimal degree to DMS ☐ Find reference angles and coterminal angles ☐ Convert between degrees and radians ☐ Naming and drawing angles in standard position
[4.2] Right Triangle Trigonometry	☐ Evaluate trigonometric functions of special triangles ☐ Use technology to find approximate values of trigonometric functions ☐ Solve real-world problems using right triangles
[4.3] Arc Length and Circular Motion	☐ Find arc length and area of a sector ☐ Linear speed and angular speed
[4.4] The Unit Circle	☐ Use the 16-point unit circle ☐ Define trigonometric functions using right triangles ☐ Find exact values using the unit circle
[4.5] Properties of Trigonometric Functions	☐ Find domain and range of trigonometric functions ☐ Determine signs and values given an angle or a quadrant ☐ Use even and odd properties ☐ Use fundamental identities
[4.6] Graphs of Sine and Cosine	☐ Find period, amplitude, midline of sine and cosine curves ☐ Graph transformations.

PRECALCULUS CURRICULUM

Scope and Sequence

Unit 4: Trigonometric Functions

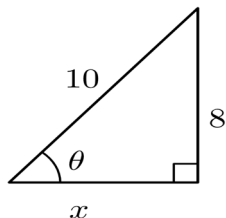
Lesson	Skills & Learning Objectives
[4.7] Graphs of Other Trig Functions	☐ Graph tangent, cotangent, secant, and cosecant functions ☐ Graph transformations
[4.8] Inverse Trigonometric Functions	☐ Relate inverse properties to trigonometric functions
[4.9] More Inverse Trig Functions	☐ Relate inverse properties for cosecant, secant and cotangent to trigonometric functions
[4.10] Sinusoidal Curve Fitting	☐ Solve real-world problems related to periodic behavior ☐ Use curve fitting techniques to sketch sinusoidal functions
[4.11] Solving Problems with Trigonometry	☐ Solve more right triangle problems including navigation and simple harmonic motion

Name _____ Date _____ Period _____

Lesson 4.2 - Right Triangle Trigonometry

Warm-Up # 1

1. Find the missing side of the triangle.



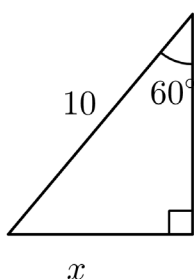
2. Find $\sin \theta$, $\cos \theta$, and $\tan \theta$ using the triangle in #1.

$$\sin \theta =$$

$$\cos \theta =$$

$$\tan \theta =$$

3. Solve for x.



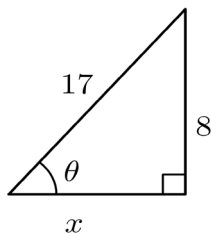
4. Evaluate using a calculator:
 $\csc 2.4$

Name _____ Date _____ Period _____

Lesson 4.2 - Right Triangle Trigonometry

Warm-Up # 2

1. Find the missing side of the triangle.



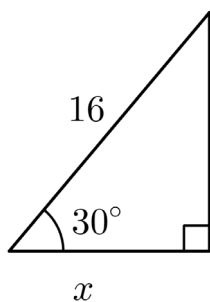
2. Find $\sin \theta$, $\cos \theta$, and $\tan \theta$ using the triangle in #1.

$$\sin \theta =$$

$$\cos \theta =$$

$$\tan \theta =$$

3. Solve for x.



4. Evaluate using a calculator:

$$\tan \frac{\pi}{10}$$

Name _____ Date _____ Period _____

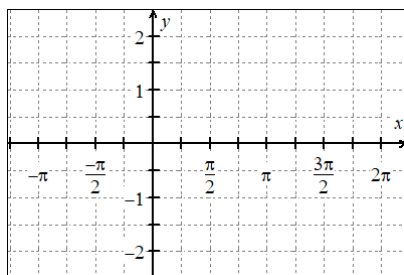
Lesson 4.7 - Graphs of Other Trigonometric Functions Warm-Up # 1

1. State the period and amplitude.

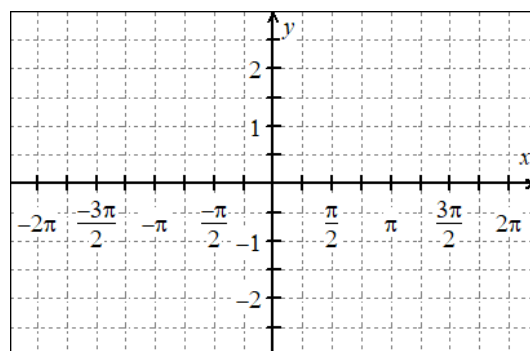
$$y = 3 \sec\left(\frac{1}{2}x - \pi\right)$$

2. Sketch two cycles of the graph, clearly label the asymptotes and the intercepts.

$$y = \tan\left(x - \frac{\pi}{2}\right)$$



3. Sketch the graph of $y = -2 \sec(2x)$



Name _____ Date _____ Period _____

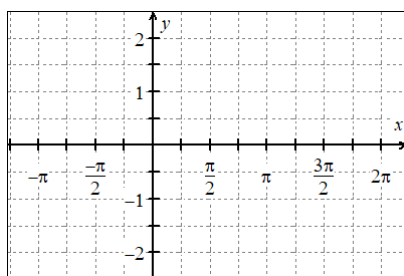
Lesson 4.7 - Graphs of Other Trigonometric Functions Warm-Up # 2

1. State the period and amplitude.

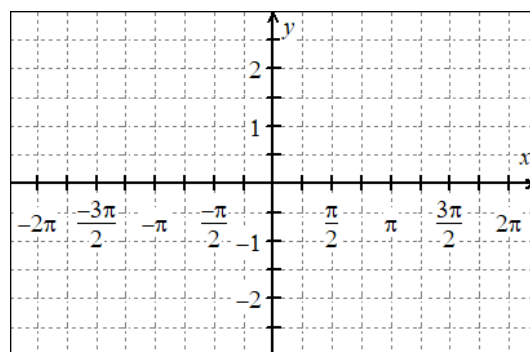
$$y = 3 \csc\left(\frac{1}{2}x + \pi\right)$$

2. Sketch two cycles of the graph, clearly label the asymptotes and the intercepts.

$$y = \cot(x - \pi)$$



3. Sketch the graph of $y = 2 \csc(2x)$

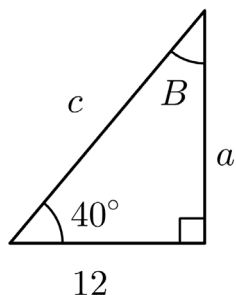


Name _____ Date _____ Period _____

Lesson 4.11 - Modeling with Trigonometry

Warm-Up # 1

1. Solve the right triangle.



2. In an isosceles triangle with base angles 34° and a base of 12 inches, find the altitude of the triangle. Round your answer to two decimal places.

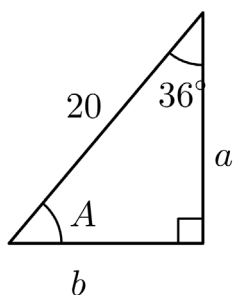
3. The sun is 40° above the horizon. Find the length of a shadow cast by a building that is 75 ft tall. Round your answer to the nearest foot.

Name _____ Date _____ Period _____

Lesson 4.11 - Modeling with Trigonometry

Warm-Up # 2

1. Solve the right triangle.



2. In an isosceles triangle with base angles 47° and a base of 24 inches, find the altitude of the triangle. Round your answer to two decimal places.

3. The sun is 33° above the horizon. Find the length of a shadow cast by a building that is 65 ft tall. Round your answer to the nearest foot.