

12.1 Trigonometric Ratios Day 2

Purpose:

To find the missing sides and angles of right triangles.

Learning Target:

- Given a right triangle, I can define the sine, cosine, and tangent ratios from an unknown angle.
- I can use Trigonometric Ratios to solve for unknown sides and angles in a right triangle.

Finding Missing Sides

You can find trigonometric ratios using your calculator!

**** Make sure your calculator is in Degree Mode****

Examples: Find the values using your calculator Round to Thousandths

1. $\sin 45^\circ$

.707

2. $\cos 87^\circ$

.052

3. $\tan 37^\circ$

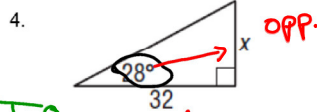
.754

SOH CAH TOA

SOH-CAH-TOA

- What do I know?
- What do I want to know?

Examples: Find the missing side lengths.

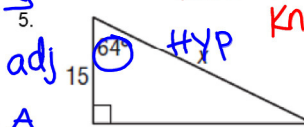


T/A adj.

~~$$\tan 28^\circ = \frac{x}{32}$$~~

$$x = 32 \cdot \tan 28^\circ$$

$$x = 17.01$$



adj C/A

~~$$\cos 64^\circ = \frac{15}{x}$$~~

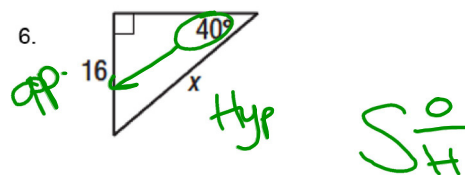
$$\frac{x \cdot \cos 64^\circ}{\cos 64^\circ} = \frac{15}{\cos 64^\circ}$$

$$x = \frac{15}{\cos 64^\circ}$$

$$x = 34.22$$

SOH-CAH-TOA

Examples: Find the missing side lengths.

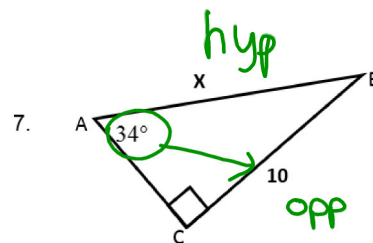


S/O

$$\sin 40^\circ = \frac{16}{x}$$

$$x = \frac{16}{\sin 40^\circ}$$

$$x = 24.89$$



~~$$\sin 34^\circ = \frac{10}{x}$$~~

$$\frac{x \cdot \sin 34^\circ}{\sin 34^\circ} = \frac{10}{\sin 34^\circ}$$

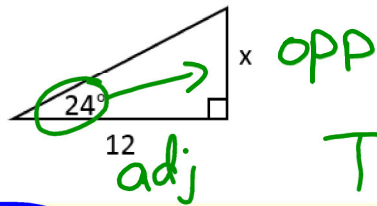
$$x = \frac{10}{\sin 34^\circ}$$

$$x = 17.88$$

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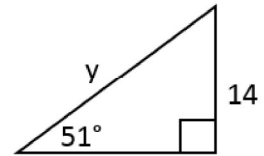
Find the missing sides of the triangle. Round your answers to the nearest tenth

8.



T
A

9.



~~$\tan 24^\circ = \frac{x}{12}$~~

$x = 12 \cdot \tan 24^\circ$

$x = \underline{5.3 \text{ or } 5.34}$

$y = \underline{\hspace{2cm}}$

10. Soon we will talk about inscribed angles and discover that their measure is half the arc that they intercept. Find g assuming that the triangle below is a right triangle.

