WARM-UP

In right triangle ABC, angle A and angle B are complementary angles. The value of $\cos A$ is $\frac{5}{13}$. What is the value of $\sin B$?

A. $\frac{5}{13}$

B. $\frac{12}{13}$

C. $\frac{13}{12}$

D. $\frac{13}{5}$

WARM-UP

In right triangle ABC, angle A and angle B are complementary angles. The value of $\cos A$ is $\frac{5}{13}$. What is the value of $\sin B$?

A. $\frac{5}{13}$

B. $\frac{12}{13}$

C. $\frac{13}{12}$

D. $\frac{13}{5}$

Use your calculator to find the ratios (in decimal form):

1. $\sin 20° =$ _____
2. $\cos 80° =$ _____
3. $\tan 35° =$ _____
4. $\sin 51° =$ _____
5. $\cos 17° =$ _____

Use your calculator to find the ratios (in decimal form):

1. $\sin 20° =$ .34

2. $\cos 80° =$ .17

3. $\tan 35° =$ .70

4. $\sin 51° =$ .78

5. $\cos 17° =$ .96

SOLVING TRIGONOMETRIC EQUATIONS

$$\sin 25° = \frac{x}{12}$$

$$\cos 45° = \frac{x}{31}$$

SOLVING TRIGONOMETRIC EQUATIONS

$$\tan 24° = \frac{8}{x}$$

$$\cos 54° = \frac{30}{x}$$

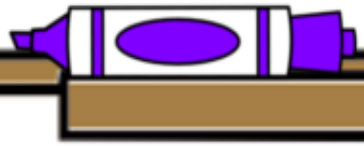
Solving Trigonometric Equations TASK

Go to student.desmos.com

Type in Code# 46Y KYR

https://student.desmos.com/join/46ykyr

1st Block



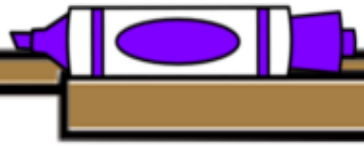
Solving Trigonometric Equations TASK

Go to student.desmos.com

Type in Code# DZG VVN

https://student.desmos.com/join/dzgvvn

2nd Block

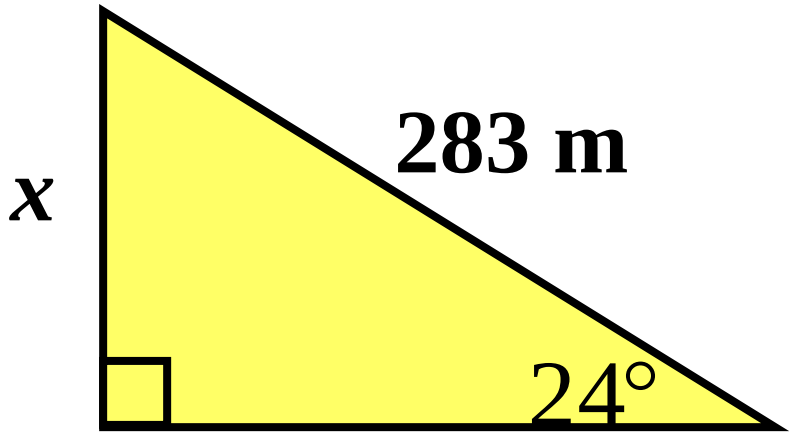


Using Trig Ratios to Find The Missing Sides of a Right Triangle

STEPS:

1) **Circle** the **reference angle**.
2) **Label** the **given** side and the **unknown** side.
3) **Identify** the trig ratio.
   - based on the given and the unknown sides
4) **Write** the trig **equation**.
5) **Solve** for the variable.

Ex: 1 **Find the missing side. Round to the nearest tenth.**



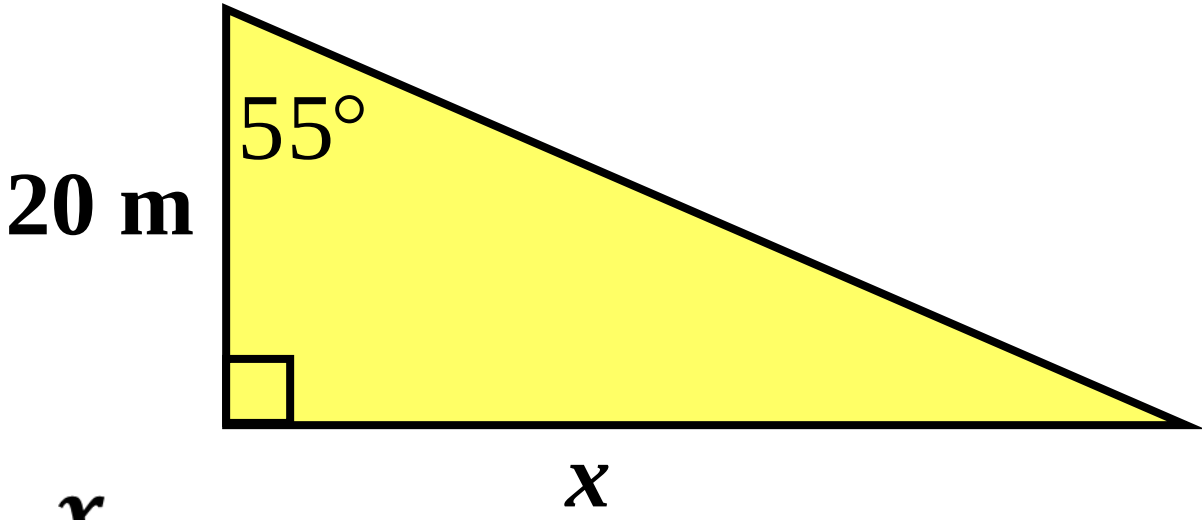
$$\sin 24° = \frac{x}{283}$$

$$283 \cdot \sin 24° = \frac{x}{283} \cdot 283$$

$$x = 283 \cdot \sin 24°$$

$$x = 115.1\ m$$

Ex: 2 **Find x. Round to the nearest tenth.**



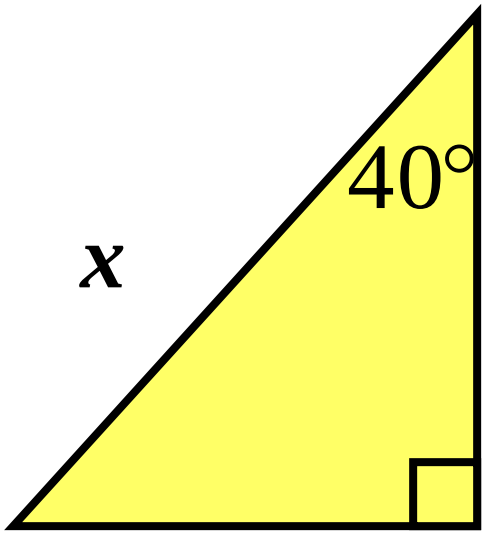
$$\tan 55° = \frac{x}{20}$$

$$20 \cdot \tan 55° = \frac{x}{20} \cdot 20$$

$$x = 20 \cdot \tan 55°$$

$$x = 28.6\ m$$

Ex: 3 **Find the missing side. Round to the nearest tenth.**



$$\cos 40° = \frac{20}{x}$$

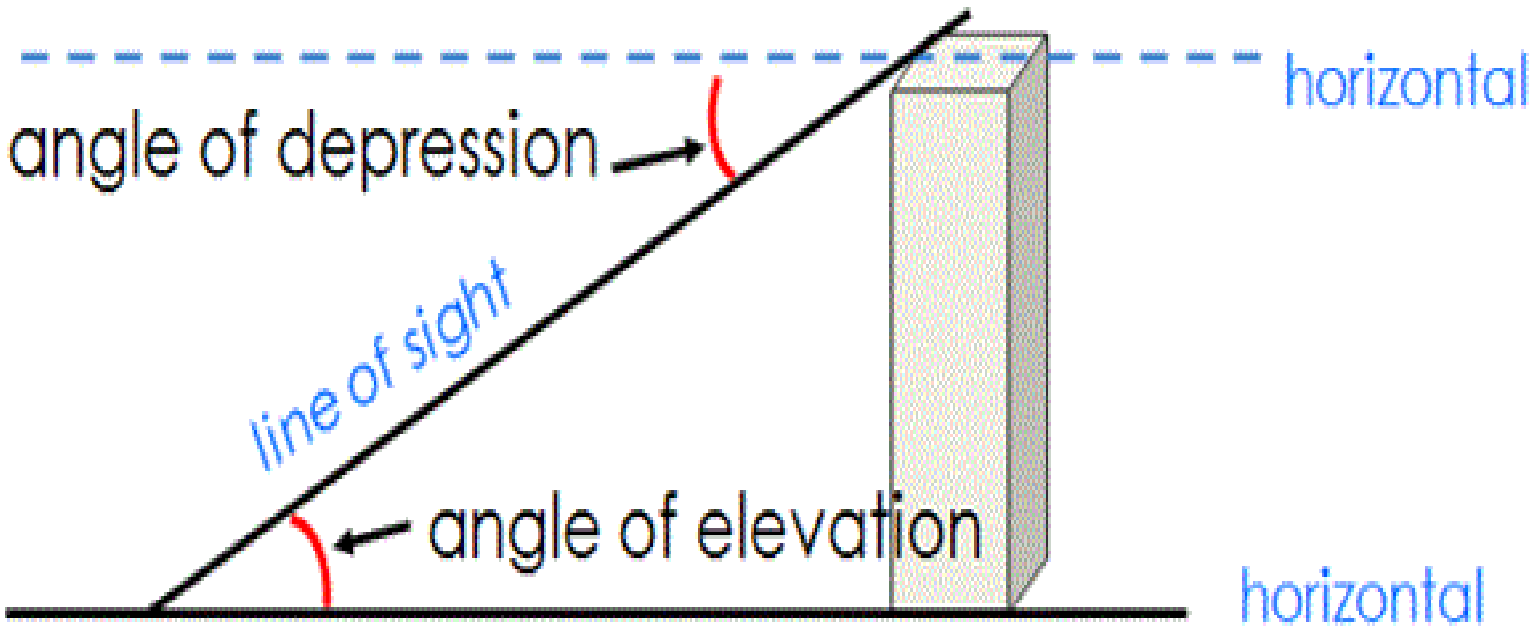
$$x \cdot \cos 40° = \frac{20}{x} \cdot x$$

$$\frac{x \cdot \cos 40°}{\cos 40°} = \frac{20}{\cos 40°}$$

$$x = \frac{20}{\cos 40°}$$

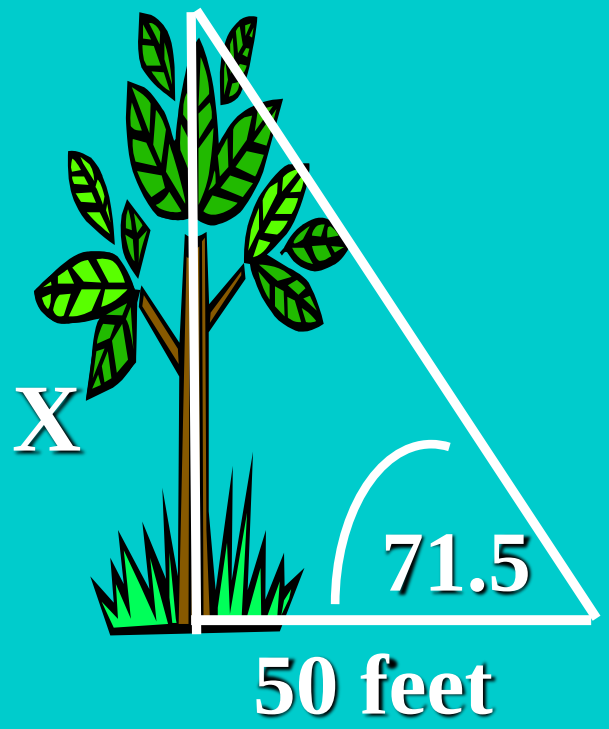
$$x = 26.1\ ft$$

Angle of Elevation & Angle of Depression



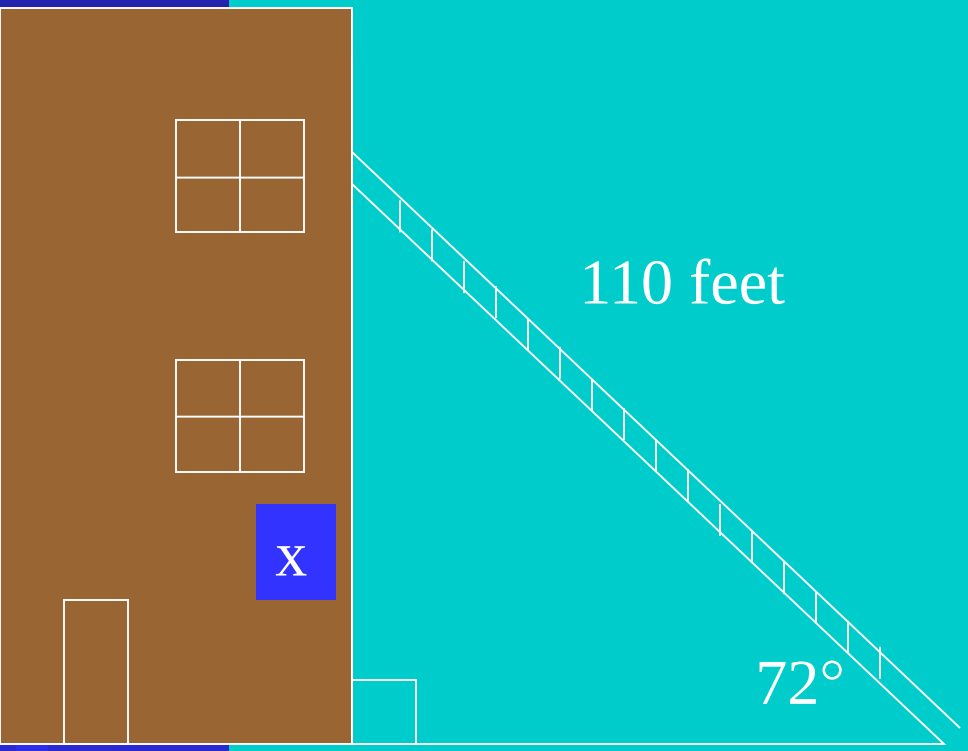
Ex 3: A tree casts a shadow that is 50 feet long. The angle of elevation to the top of the tree is 71.5^0. How tall is the tree?

Ex 3: **A tree casts a shadow that is 50 feet long. The angle of elevation to the top of the tree is 71.5^0. How tall is the tree?**



Ex. 4

A safety regulation states that the maximum angle of elevation for a rescue ladder is 72°. If a fire department's longest ladder is 110 feet, what is the maximum safe rescue height?



$$\sin 72 = \frac{x}{110}$$

$$110 * \sin 72 = \frac{x}{110} * 110$$

$$x = 104.6\ ft$$

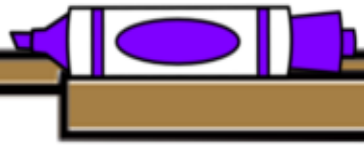
HOMEWORK: Using Trig Ratios to Find Missing Sides

Go to student.desmos.com

Type in Code# RMM HGV

https://student.desmos.com/join/rmmhgv

1st Block



HOMEWORK: Using Trig Ratios to Find Missing Sides

Go to student.desmos.com

Type in Code# 4AP 2XM

https://student.desmos.com/join/rmmhgv

2nd Block