

Today's Plan:

Learning Target (standard): I will find the area of oblique triangles.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

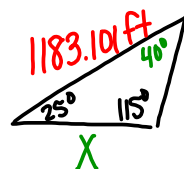
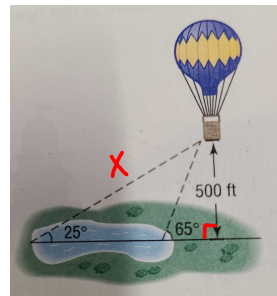
From a stationary hot-air balloon 500 feet above the ground, two sightings of a lake are made. How long is the lake?

$$\sin 25^\circ = \frac{500}{x}$$

$$x \sin 25^\circ = 500$$

$$x = \frac{500}{\sin 25^\circ}$$

$$x = 1183.101 \text{ ft}$$



(AAS)

$$\frac{\sin 115^\circ}{1183.101} = \frac{\sin 40^\circ}{x}$$

$$x \sin 115^\circ = 1183.101 \sin 40^\circ$$

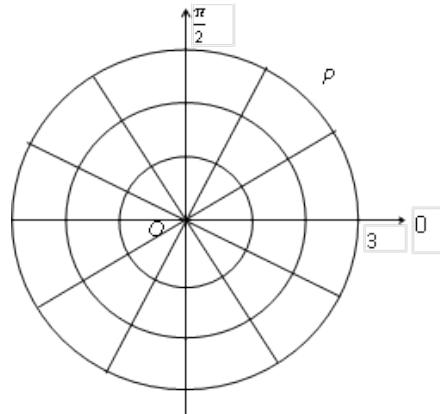
$$x = \frac{1183.101 \sin 40^\circ}{\sin 115^\circ}$$

$$x = 839.100 \text{ ft}$$

Polar Coordinates

A polar coordinate system is a system to plot points in a plane with a point O in the center of a circular grid.

$$(r, \theta)$$



The Pole is the point O , the origin.

Polar Axis the horizontal ray from O pole (origin) to the right.

Polar Coordinates of each point in the plane $P = (r, \theta)$

$r =$ Directed distance from O to P .

$\theta =$ Directed angle in a counter-clockwise direction from polar axis to OP .

Plotting Polar Coordinates:

- measure the provided trigonometric angle
- count off the r on the terminal side of the angle if r is positive
- count off the r in the direction opposite the terminal side of the angle if r is negative

rectangular coordinate

(x, y)

polar coordinate

(r, θ)