Cornell Notes

AVID Decades of College Dreams

Topic/Objective: Applications of Right Triangles

Name:

Class/Period: 4

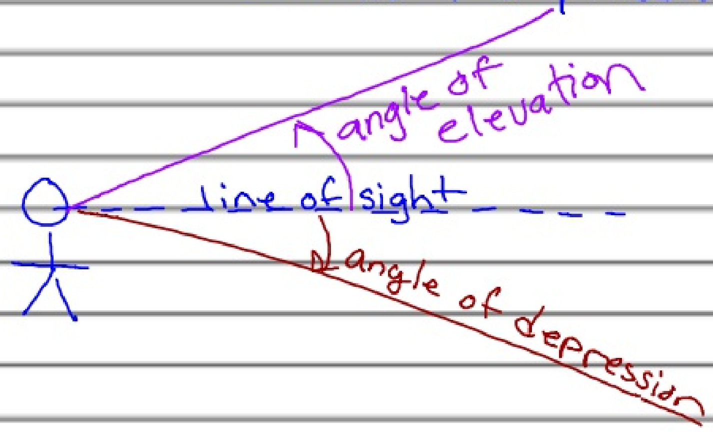
Date: 9/20/16

Essential Question: What are ~~the~~ some applications for right Triangles?

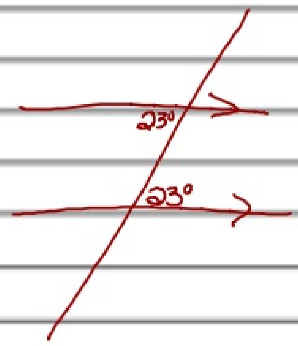
Questions:

Notes:

Angles of Inclination/Declination
Elevation / Depression

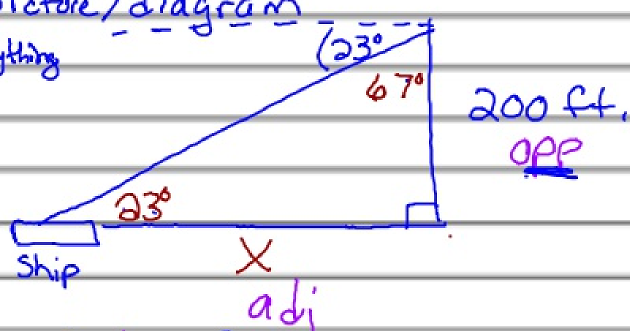


Ex) From the top of a 200ft lighthouse, the angle of depression to the sea is 23 degrees down to a ship. How far is the ship from the base of the lighthouse?



*Draw a picture/diagram

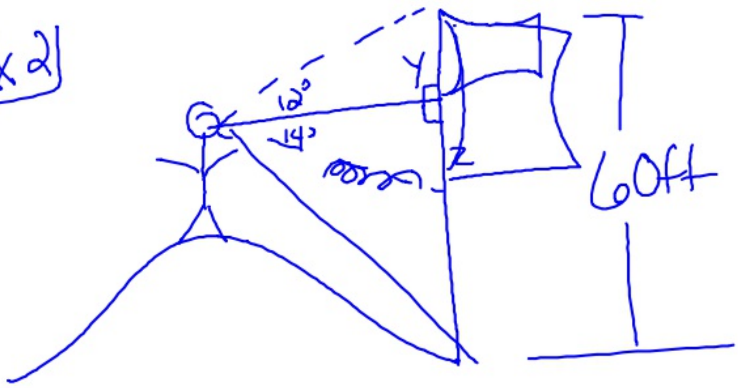
*Assume everything is level



$$\tan(23°) = \frac{200}{x}$$

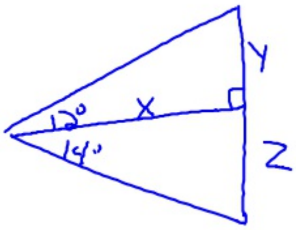
$$x = \frac{200}{\tan 23°} \approx 471 \text{ ft.}$$

Ex 2



$y =$

$z =$



$y + z = 60\text{ ft}$

$2x + 2y$

$2(x + y)$

$\tan 12° = \frac{y}{x}$ $\quad x \tan 12° = y$

$\tan 14° = \frac{z}{x}$ $\quad x \tan 14° = z$

$$x \tan 12° + x \tan 14° = 60$$

$$\frac{x\cancel{(\tan 12° + \tan 14°)}}{\cancel{\tan 12° + \tan 14°}} = \frac{60}{\tan 12° + \tan 14°}$$

$$\sin(\theta + \beta) = \sin\theta\cos\beta + \cos\theta\sin\theta$$

$$\tan(\alpha + \beta) = \cancel{1 - \cos^2\alpha \cdots}$$