

# Lesson 8-10 : Slope and Mixed Practice

Agenda - Check HW 8-9

Notes 8-10

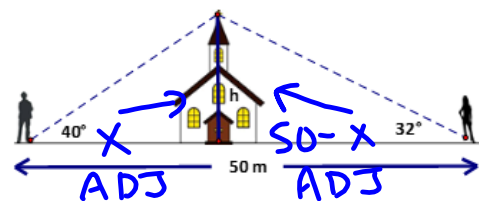
Quiz

HW - 8-10 - Finish Packet

Test - Mon/Tues

Extra Credit: (Do on separate paper and submit)

Jack and Jill are on either side of the church and 50 m apart. Jack sees the top of the steeple at  $40^\circ$  and Jill sees the top of the steeple at  $32^\circ$ . How high is the steeple to the nearest tenth?



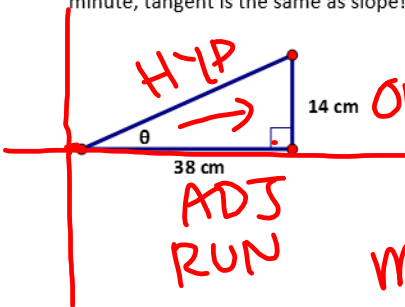
$$\begin{aligned} \tan 40^\circ &= \frac{h}{x} & \tan 32^\circ &= \frac{h}{50-x} \\ x \tan 40^\circ &= (50-x) \tan 32^\circ \end{aligned}$$

Geometry + LAB

Name \_\_\_\_\_ Date \_\_\_\_\_ Section \_\_\_\_\_

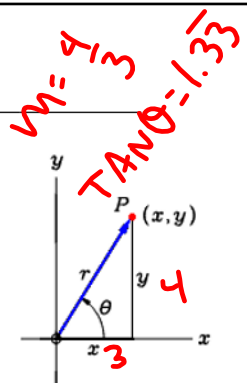
8-10R/8-12LAB Slope & Mixed Practice

A student who did very well in Algebra 1 looked at this trigonometry problem, and said "What a minute, tangent is the same as slope!!" Why would she say this? How is tangent the same as slope?



OPP = RISE

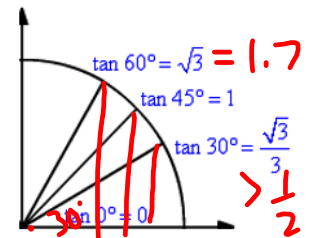
$$m = \frac{\text{RISE}}{\text{RUN}} = \frac{\text{OPP}}{\text{ADJ}} = \text{TAN } \theta$$



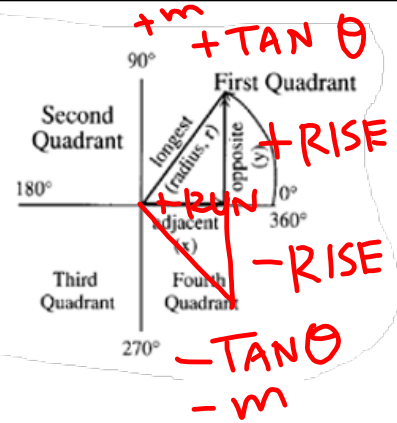
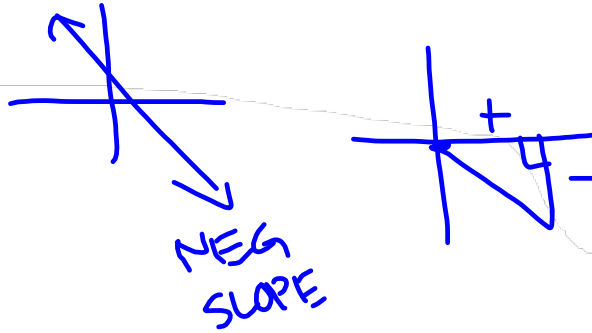
- Look at Quadrant I of the unit circle and draw the right triangle for each angle measure.

Compare  $\frac{\text{rise}}{\text{run}}$ . What is happening with the slope as the angle measure increases?

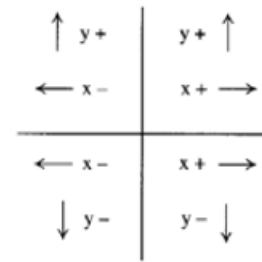
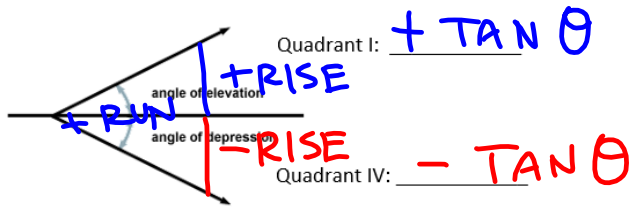
$\text{SLOPE } \uparrow \text{ AS REF } \angle \uparrow$   
 $\text{TAN } \uparrow$



- What happens when we move the angle down into Quadrant IV?



Therefore,  $\pm$  the tangent of a reference angle will equal the slope of the line.



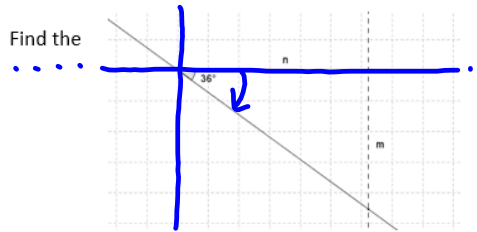
Radius always +  
 $r^2 = x^2 + y^2$

Example 1: A line on the coordinate plane makes an angle of depression of  $36^\circ$ . Find the slope of the line, correct to four decimal places.

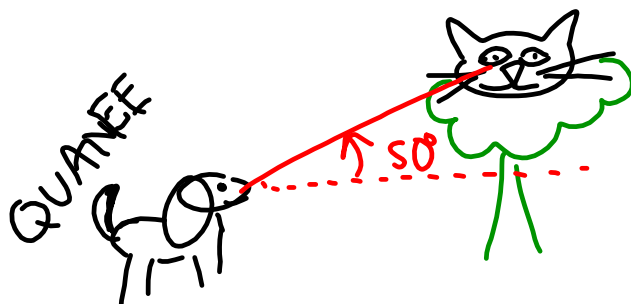
$$m = - \text{TAN } \theta$$

$$= - \text{TAN } 36^\circ$$

$$= - 0.7265$$



Example 2: A dog on the ground sees a cat in a tree at an angle of elevation of  $50^\circ$ . What is the slope of the line? Draw a sketch, and express the slope to the nearest ten thousandth.



$$m = + \text{TAN } \theta$$

$$= + \text{TAN } 50^\circ$$

$$= + 1.1917$$

SLOPE

## Attachments

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Bridge to 8.docx

Quiz 1 L.pdf