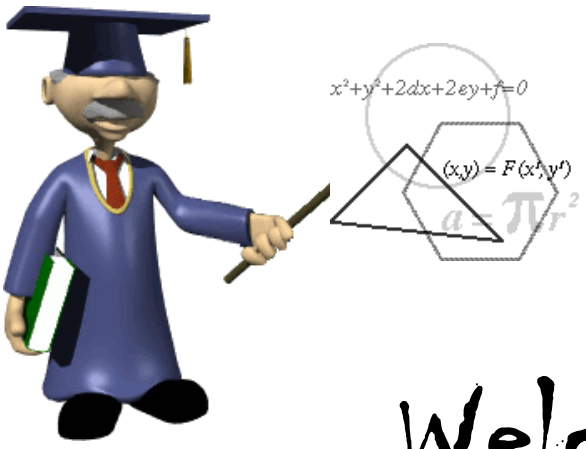
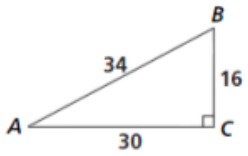
L9.3



Welcome Back!

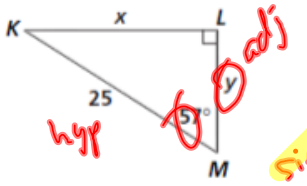
Lesson Quiz — Lesson 9-2

Use this figure for Exercises 1 and 2.



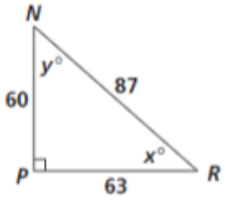
1. Write the ratios for sin A and sin B.
2. Write the ratios for cos A and cos B.

Use this figure for Exercises 3 and 4.

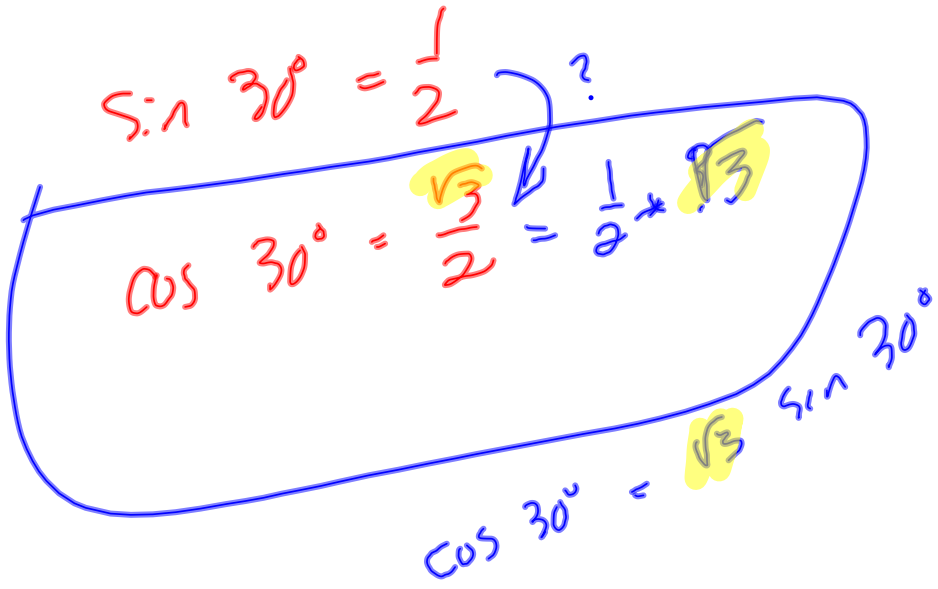


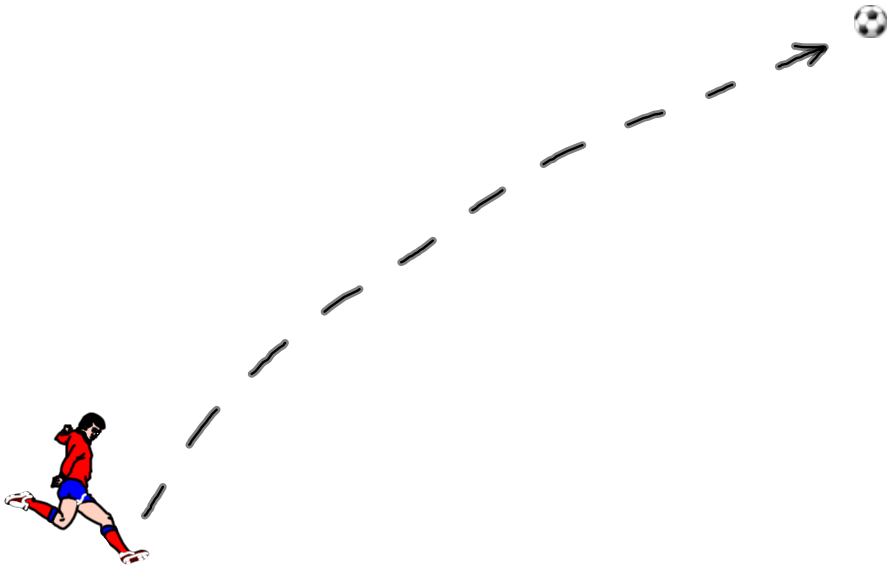
3. Find x to the nearest tenth.
4. Find y to the nearest tenth.

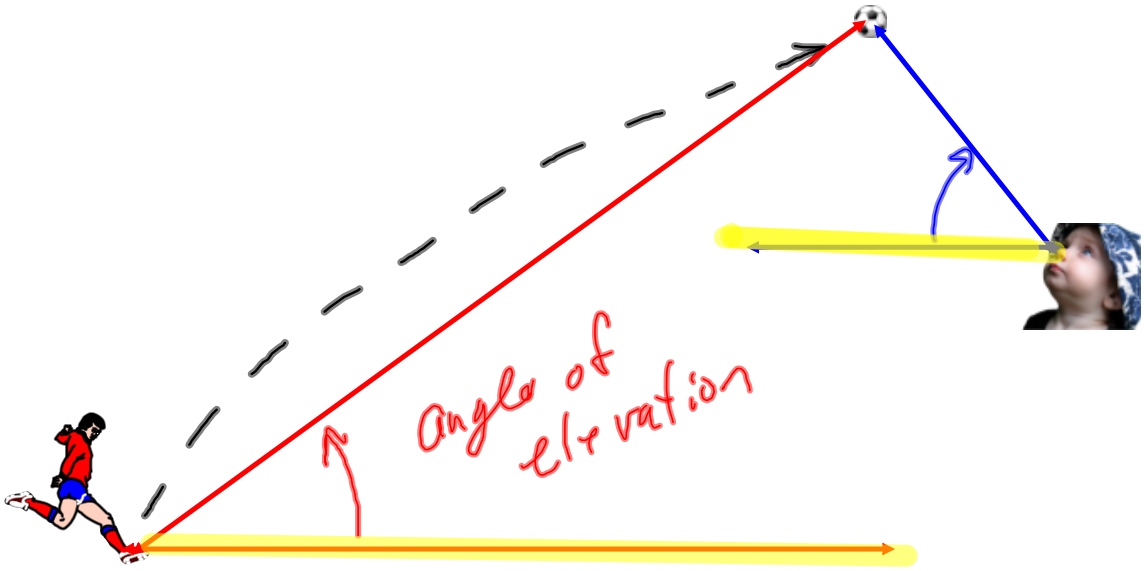
Use this figure for Exercises 5 and 6.



5. Find x to the nearest degree.
6. Find y to the nearest degree.


sin 30° = 1/2
?
cos 30° = √3/2 = 1/2 * √3
cos 30° = √3 sin 30°

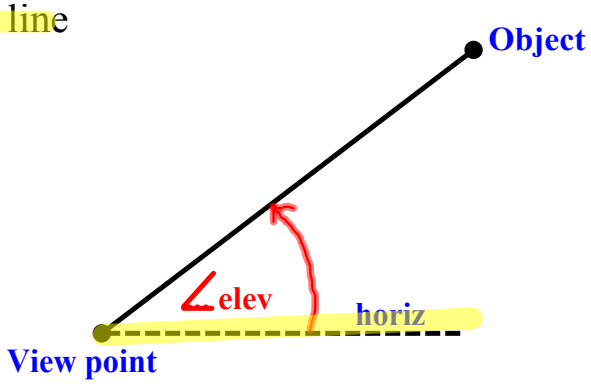



Angle of
elevation

Defn: Angle of Elevation

L9.3

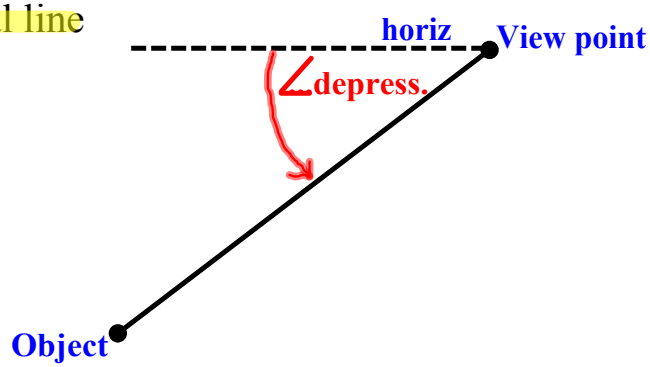
Angle measured from a horizontal line
through the view point
up to the object above it.



Defn: Angle of Depression

L9.3

Angle measured from a horizontal line through the view point down to the object below it.



Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to _____
relative to _____ thru _____.

Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to the object
relative to _____ thru _____.

Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to the object
relative to horiz. line thru _____.

Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to the object
relative to horiz. line thru viewpt.

Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to the object
relative to horiz. line thru viewpt.

Elevation: object is _____

Depression: object is _____

Identifying ∠'s of Elev or Depression L9.3

*** From / to relationship ***

From the viewpoint
to the object
relative to horiz. line thru viewpt.

Elevation: object is ABOVE

Depression: object is _____

Identifying ∠'s of Elev or Depression L9.3

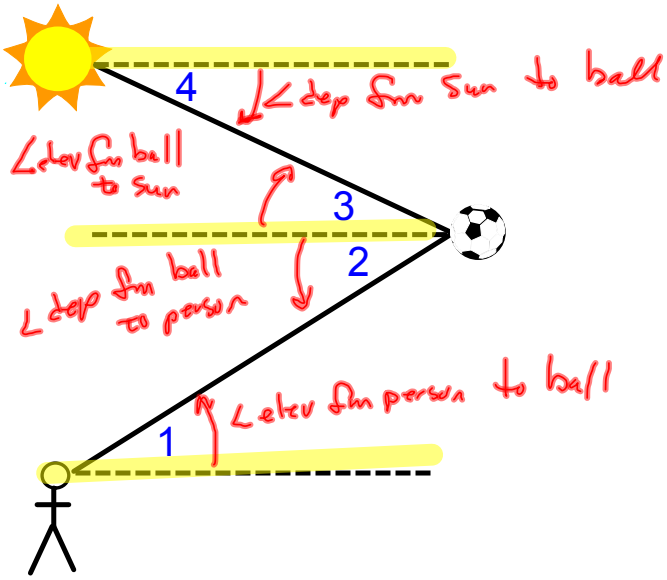
*** From / to relationship ***

From the viewpoint
to the object
relative to horiz. line thru viewpt.

Elevation: object is ABOVE

Depression: object is BELOW

Describe each angle... L9.3



Look @ probs #9-12 pg 484... L9.3

How do they relate to this lesson?

Look @ probs #9-12 pg 484... L9.3

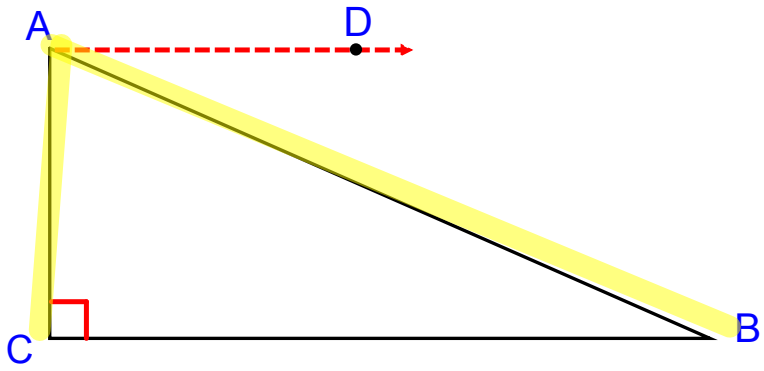
How do they relate to this lesson?

We can form a right Δ using the $\angle$ of elev/depression...
...then use trig to solve for missing parts.

Common error...

$\angle$ ABC is an angle of elevation.

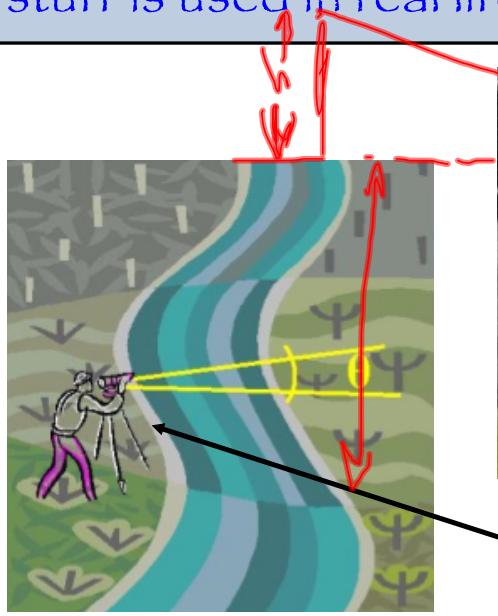
$\angle$ CAB is NOT an angle of depression!!!



$\angle$ DAB is IS an angle of depression.

How this stuff is used in real life... L9.3

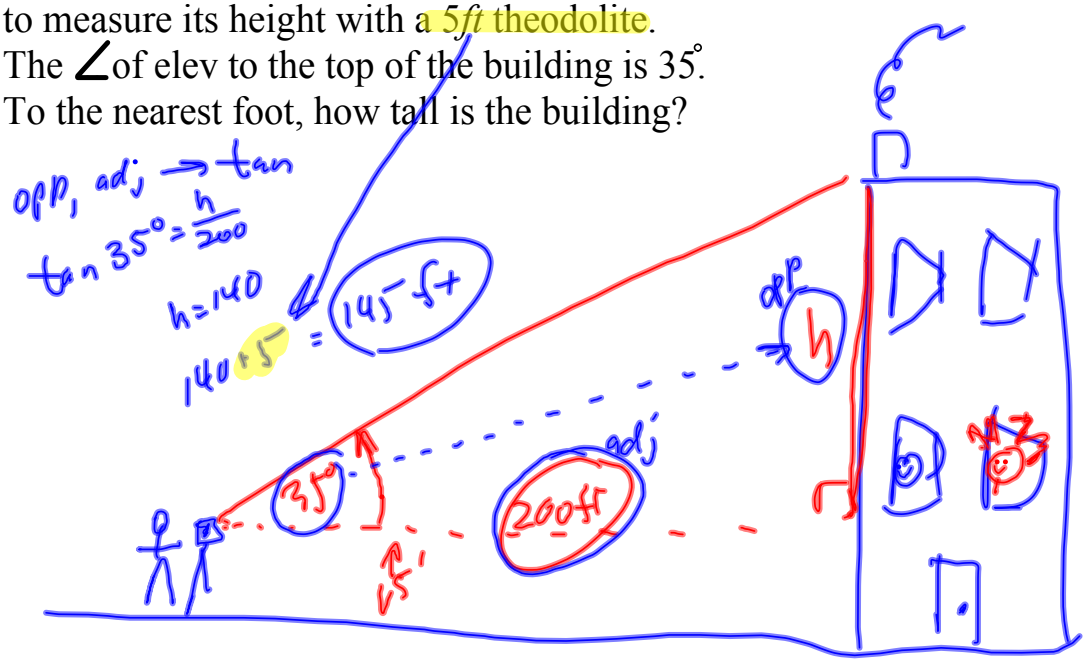
Theodolite



Surveyors

Example

A surveyor stands 200*ft* from a building to measure its height with a 5*ft* theodolite. The ∠of elev to the top of the building is 35°. To the nearest foot, how tall is the building?

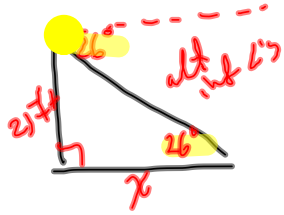


1

Practice... L9.3

pg 484 #14, 15

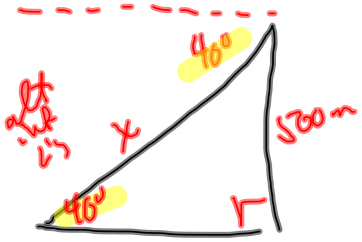
14



$x = 51.3$ ft

$\tan 26° = \frac{25}{x}$

15



$\sin 40° = \frac{500}{x}$

$x = 777.9$ m

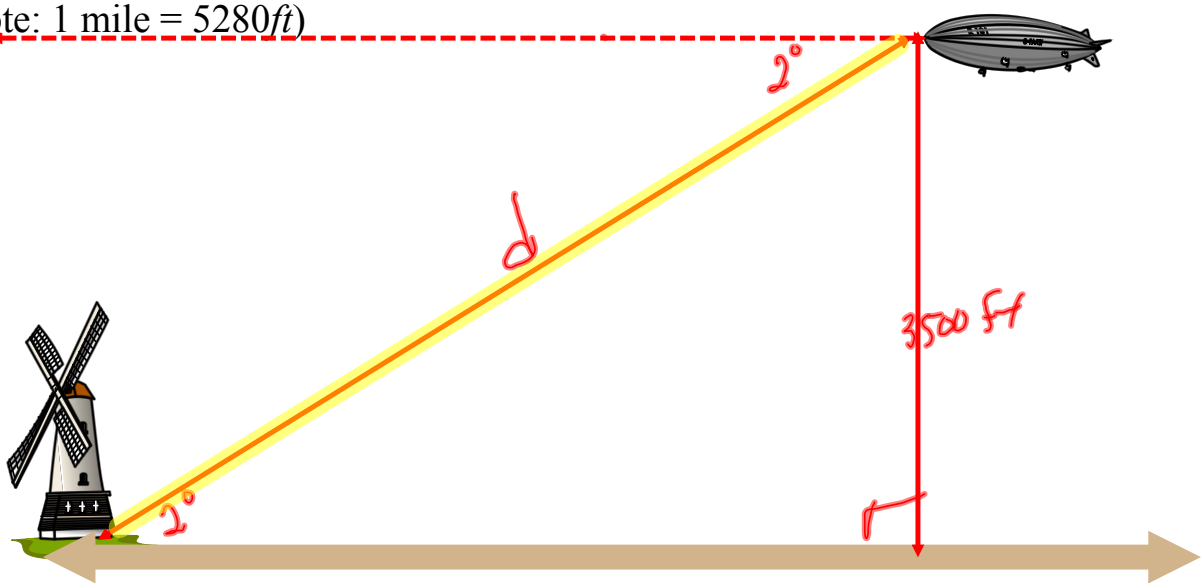
777.86 ≥5 ↑

d, <5 ↓

777.9

Example

An airplane flying 3500*ft* above ground begins a 2° descent to land at an airport. How many miles from the airport is the plane when it begins its descent?
(note: 1 mile = 5280*ft*)



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L9.3 HW Problems

Pg 484 #1-21, 23, 28, 33, 34