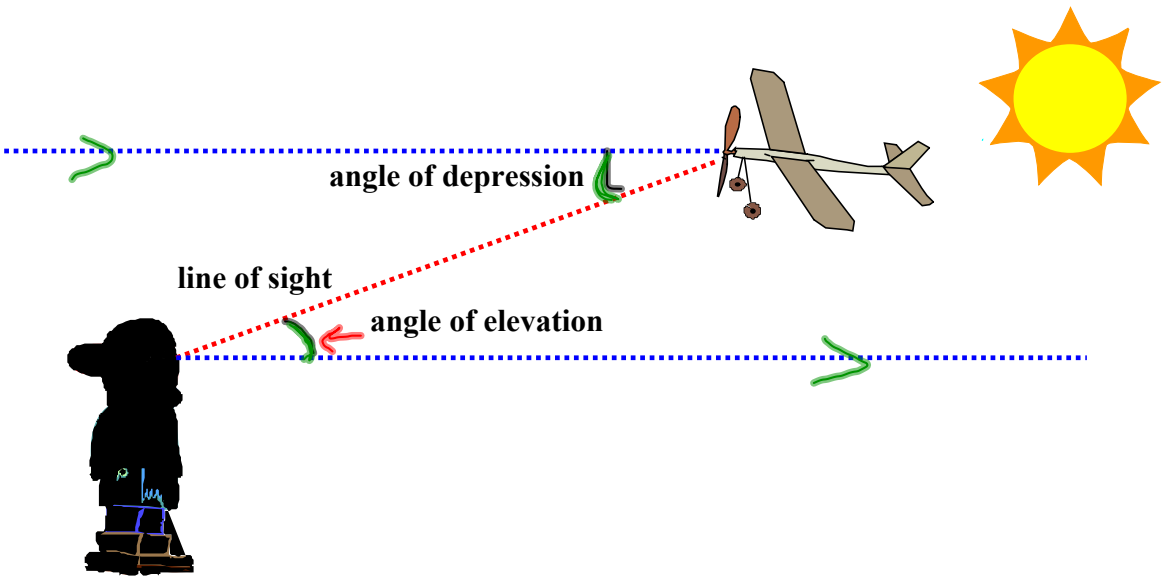
## Sec. 8.5 - Angles of Elevation & Depression

# Angle of Elevation

- the angle formed by a horizontal line and an observer's line of sight to an object above the horizontal line

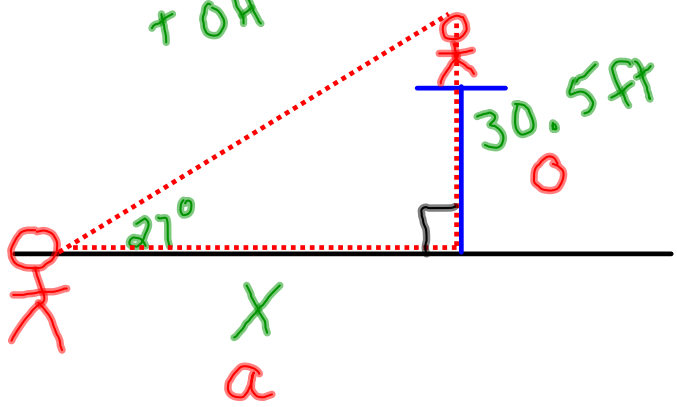
# Angle of Depression

- the angle formed by a horizontal line & an observer's line of sight to an object below the horizontal line



**At the circus, a person in the audience at ground level watches the high-wire routine. A 5 foot 6 inch tall acrobat is standing on a platform that is 25 feet off the ground. How far is the audience member from the base of the platform, if the angle of elevation from the audience member's line of sight to the top of the acrobat's head is 27°?**

SOH
CAH
TOA




$\tan 27^\circ = \frac{30.5}{x}$

$.509 \cdot x = \frac{30.5}{x} \cdot x$

$\frac{.509x}{.509} = \frac{30.5}{.509}$

$x = 59.9$ ft

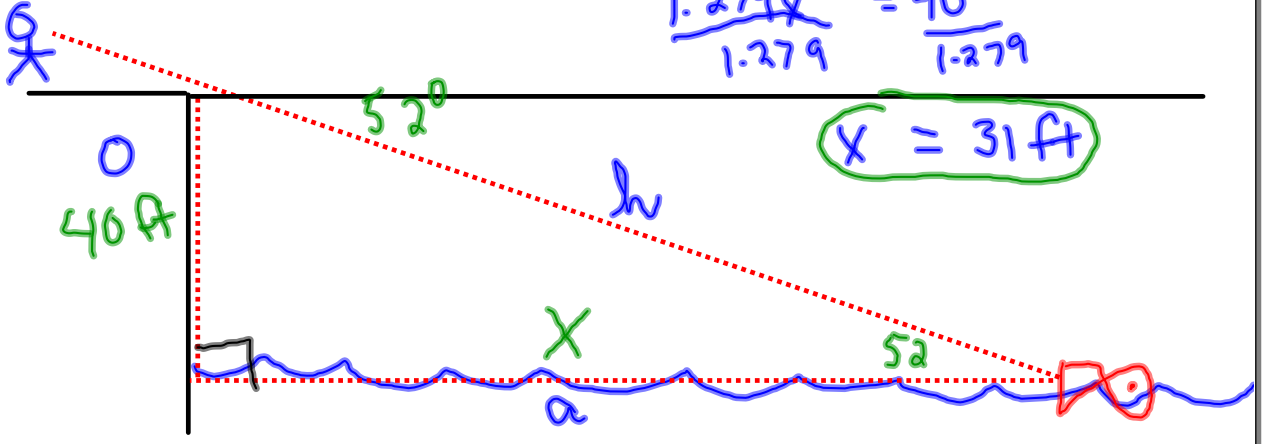
**Maria is at the top of a cliff & sees a fish in the water. If the cliff is 40 feet above the water, & the angle of depression is 52°, what is the horizontal distance from the fish to the cliff to the nearest foot?**

$\tan 52^\circ = \frac{40}{x}$

$1.279 \cdot x = \frac{40}{x} \cdot x$

$\frac{1.279x}{1.279} = \frac{40}{1.279}$

$x = 31$ ft



# Homework:

## p.577, # 1,2,4,15, 28-31 all

**Honors: 5**

**Show work on all problems**

**(even multiple choice ones)**